

CHAPTER I

INTRODUCTION

1. 1. Background

This section provides a background for the study by discussing the need for information, and how publications, as one form of information media, influence the quality of information conveyed. It introduces the problem of the study, i.e. the need to assess the quality of publications, the objectives, and the scope of the study.

1. 1. 1. The Need for Scientific Publication

Meyer (2011) stated that scientific publication has four (4) modes, namely publicity, exam, business, and ritual. Publication has been made as a medium for publishing scientific works. In some cases, scientific publication has been used as part of the examination in post graduate studies of which authors had to write and submit their works to the publisher repeatedly to have them published or rejected. Publications had also been proven to be used to earn money, however, in many conferences, authors need to pay some amount of money to participate and publish their papers. Mart (2012) indicated that scientific publication had been utilized as a tool for claiming property right, striving knowledge development, preventing plagiarism, improving scientific collaboration and sharing, and keeping high quality research. The next paragraphs discuss on the utilization of information as core publication.

Human beings need information in almost all aspects of their lives. In management, information is used for planning, organizing, leading and controlling (Ditkaew and Ussahawanitchakit, 2010). The range of information needs is diverse. From one point of view, Taylor (cited in Bartlett and Toms, 2005) classified the use of information into

eight (8) purposes, viz. enlightenment, problem understanding, instrumental, factual, conformational, projective, motivational, also personal and political. The sections below illustrate the many uses of information in several fields.

In health services, information is used in many ways from broad planning to specific situations. Cohen and Adams (2011) reported that the Internet has been widely used for seeking health information for insurance and non-insurance coverage users. A very good example, women at risk of breast cancer were found to seek information related to healthy eating, active living and maintaining healthy body weight (Paisley, 2008). Pregnant women seek information related to a variety of foodstuff suitable for themselves and the unborn child. (Szwajcera, Hiddink, Maas, Koelen, and VanWoerkum, 2008). Kendall, Thompson, and Couldridge (2004) found that information related to driving legislation, effects of epilepsy, coping with epilepsy, medications, surgery, side effects of medications, interaction of drugs and other medications, and complementary therapies were needed by caregivers of adults diagnosed with epilepsy. A study by Dillen, Van Hiddink, Koelen, de Graaf, and Van Woerkum (2004) examined the information needs among Dutch adults, which included information on losing weight, sports and nutrition, lowering cholesterol, carbohydrates and food composition. In Pennsylvania, USA, Drinking Water Solutions (DWS) a web-based system was developed to provide information related to risk estimate, occurrence/exposure and pharmacokinetics (Robillard, 1993), with the aim of reducing drinking water contamination.

In climate and weather forecasting, information needs are just as diverse. Meteorologists and geophysicists used local drought information for national weather service on drought mapping (Dow, 2009). In another meteorological study, Tribbia

and Moser (2008) found that coastal managers used climate change information on environmental features, weather, hydrology-related, socioeconomic conditions and geologic information in California Coastal areas to assess the impact of climate change and to prepare for eventualities arising from it. Corrinham et al. (2008) used scientific and forecast information as input for wild land fire management. Both types of information were applied for improving fuel treatments and target burning, positioning and moving of initial attack resources. This information was also used for staffing and budgeting. These examples show the diverse uses of information that can benefit mankind.

Popoola (2009) mentioned that information becomes critical factor at every stage of decision-making in insurance companies. The managers need sufficient, accurate, complete, reliable, current and timely information for effective decision making. Another similar utilization of information is mentioned by Nwagwu and Iheanetu (2011) where policy makers need information to increase the effectiveness of public policies. According to Day and Peters (1994), journals were utilized in Forums as well for: a) the discussion of research methodologies within a subject area, b) the explication and examination of individual research projects, and c) the investigation of the application of research. Journals also provide area for intellectual work, communication channel for readers within related disciplines, system for recognizing individual and institutional contributions to knowledge development (Law and Van der Veen, 2008).

The agricultural sector needs many types of information. Achugbue and Anie (2011) found that rural female farmers in Delta State, Nigeria, needed information related to preservation of farm production, pest control, treatment of animals, religion, health and economic matters. In another study by Bakar (2011) reported that information needs of rural women in Malaysia included information related to finance, child education,

religion and food. Other related studies included Illinois farmers, where Villamil (2008) reported that utilization of *Miscanthus* as energy crops by the farmers which also included information related to agronomy, markets, inputs reduction and environmental services. Atherton et al. (1999) reported that farmers needed information related to variability within the field of the farm, influence on the variability on crop responses, and current used management practice. For food security, Gareau (2004) found that existing information system in food assistance organizations in Oktibbeha County should be completed with information on the programs, food site inventory, client history, food donation, and nutrition education. Meanwhile, Magarey et al. (2009) reported that plant bio-security needs information on biology, cargo manifest pre-arrival, commerce trade, freight climate, survey methods, treatment, and management.

Other researchers examined information needs on dairy farms. Asseldonk et al. (1999) showed that potential improvement on dairy farms can be obtained by including information on oestrus, reproduction control, clinical mastitis, subclinical mastitis, other infections, metabolic disorders, leg/claw disorders, health care control, milk production control, feed calculation, ration composition, feeding, nutrition control, and other processes for decision makers. In Nigeria, Olaniyi and Adewale (2011) mentioned that utilization of agricultural information is a prerequisite to agricultural development. The information was used for repackaging market and legal information and providing the information more accessible to the end users. Mulyani et al. (2006) reported that agricultural information was utilized for planning extension programs and for preparing extension materials and exhibitions.

Dhawan (nd) mentioned there were several types of communication in publications namely, oral, verbal, visual, and multi-media. Verbal communication can be conducted using oral or text of which traditional printed media has been used by student and staff

of urban and rural universities in South Africa (Nkomo et al. 2011). Kipphan (2001) classified printed media into commercial printing (catalog, brochure, leaflet, and business card) which is produced occasionally and periodical (newspaper, journal and magazines) which is produced periodically. Hyer and Covello (2007) and Menon (2008) indicated that mass media as communication media which included newspapers, magazines, television, radio and the Internet. Sethi in Rafiq and Ameen (2009) also indicated almost similar media, journals, books, government documents and reference services as the source of information.

Journals are important in the scientific world and have been considered a prestigious type of publication. The importance of the scientific journals is related to improving the quality of research and teaching, helps scholars to do their work faster, and saves them time and money (Tenopir and King, 2001). Thanuskodi and Ravi (2011) said that digital resources were used for research purpose, for publishing articles/books, for teaching purpose, for keeping up-to-date in subject area, for getting relevant information in the area of specialisation, and for getting current information.

Bhatia (2011) stated that journals helped respondent on updating subject of interest, career development, academic assignment, and preparing for competitive examination. Meanwhile, Nkomo, et. al. (2011) reported that students and staff search for information on the web, including in the form of journal to fulfill needs pertaining to research, teaching, studies and communication. They also fulfill unscholarly needs such as banking, searching for employment, or making hotel and travel arrangements.

1. 1. 2. The Needs for Identification of Publication Characteristics

Characteristics of scientific publication had drawn attention of many researchers. Credibility, validity, and reliability were the characteristics of publication which was commonly used by researchers to determine user satisfaction of an information, software application or system application. Gendron and D'Onofrio (2001); McKinney, Yoon, and Zahedi (2002); Doll and Torkzadeh (1988); Doll, Weidong, and Torkzadeh (1994); Lee et al. (2002); Craigie et al. (2002) and Leung (2007) were researchers who used these characteristics in their researches. Many dimensions constructed these main characteristics. Accuracy, accessibility, appropriateness, completeness are several user satisfaction dimensions (see chapter 2 for other dimensions of user satisfaction). User satisfaction approach commonly uses for assessing information quality. In advance, information quality will determine many aspects of organization as described in the 'Needs for Information Quality' section.

Besides the characteristic of information based on user satisfaction approach, characteristic of publication based on bibliographic and citation information have also become interesting areas of study. Many researchers conducted research related to bibliographic data such as author of an article (number, distribution, most prolific), affiliation of author (distribution and most prolific) and commodities as subjects of their articles (Zainab, Sanni, Edzan, and Koh (2012); Konur (2011); Ram (2010, 2011); Cohen, Chaiton, and Planinac (2010); Sharkel and Choudhury (2010); Swarna, Kalyane and Kumar (2008); Tsay (2008); (Koehler et al. (2000); Koganuramah, Angadi and Kademani (2002); Koganuramah et al. (2004); Kademani, et al. (2006); Tiew (2006); and Biswas, Roy and Sen (2007)).

Meanwhile, Zainab, Sanni, Edzan, and Koh (2012); Konur (2011); Ram (2010, 2011); Hadimani and Rajgoli (2010); Sharkel and Choudhury (2010); Kumar and Kumar

(2008); Swarna, Kalyane and Kumar (2008); Tsay (2008); Koehler et al. (2000); Rousseau (1997); Ramsay and Stapledon (1998); Yin (1998); Noyons, Moed, and Luwel (1999); and Budd (1999) and many other researchers studied citation analysis. They assessed citation, relationships between citing and cited item, pattern of attribution, publication pattern and pattern of authorships and Lotka's law, pattern of self citations, internationalization, scientific impact and other subjects of bibliographic and citation analysis research.

Garfield (1972, 1979, 1998b) stated that bibliographic and citation analysis benefited researchers as to determine optimum make up of both special and general collection, to determine maximum size of back file, establish rational binding and retention schedule journal by journal rather than groups of journal, provide solid basis for cost benefit analysis, evaluate people either as individual or in small formal groups. The analysis also had significant roles in defining the history of scientific development, measuring the activities and interactions of scientific specialties, measuring of scientific activities, judging scientific achievement, indicating journal performance, rating journal, and evaluating the implementation of science policy. Chun et al. (1999), Jones (1999), Ormerod (1997) and Frandsen and Rousseau (2005) also dealt with the importance of bibliographic and citation analysis.

1. 1. 3. The Needs for Quality Scientific Publication

Quality of information in a journal is reflected on the quality of its publication. In the health aspect, Werner et al. (2009) stated that quality information of public reporting is a potentially powerful tool to improve health care quality. Naryshkin and Schultz (2009) in their research on assessing data quality provided on Pap test requisitions concluded that high accuracy of completion of requisition slips helped physician or authorized paramedical personnel identifying high-risk Pap tests patients. In addition,

Eysenbach and Diepgen (1998) revealed the danger of low information quality on the internet where the information presented in the website is harmful.

In accordance to the use of quality of publication, Garfield (1979, 1998a, 1998b, 2006) used citation analysis approach on nominating scientists who will receive research fund. He evaluated research articles of the scientists published in international journal. This effort succeeded to select qualified scientists from 20,000 applicants within 3 months. Meanwhile, Newman and Tumbull (in Rupp and McKinney, 2002) found that career citations, total publication, and quality of publication are significant determinant earning of tenure economic faculty. Damasco and Hodges (2012) also reported that publication was used to evaluate faculty scholarship. In general they made ranking of applicants by evaluating their publications using bibliometric analysis.

Information quality also enables students to prevent failure. English (2001) mentioned that students failed to answer questions in examination correctly. The failure had happened due to misinformation occurred in giving order to change the questions of the examination without following the order to change the answers.

Referring to other researchers, Ditkaew and Ussahawanitchakit (2010) mentioned that information can improve performance of an organization. Good information quality ensure: a) the improvement of strategic cost management and strategic decision-making, b) the improvement of management quality, and c) supports decision making in organization and prevent decision-making errors. It also guarantees: a) improvements inefficiency and effectiveness, b) increasing capacity to reporting fast, c) decreasing risk and increasing competitive advantage, d) integrating of information from various organization sub-units, and e) achieving goals of the organization. Abraham et al.(2004) studied employee awareness of provider's quality information. They concluded that

distributing booklets or making employers available on request can increase the awareness of the employers with low quality information awareness.

Impact factor is one of methodology on assessing journal quality proposed by Institute for Scientific Information (ISI). Unfortunately, journals published in the local languages and non-international journals are not covered by the ISI database. Those however, do not reflect that those journals have little influence. In the context of Indonesian journal of agricultural science published by IAARD, articles entitled “Alternative Tree Crops For Reconstruction of the Green Infrastructure Post-Tsunami in the Coastal Areas Of Aceh Barat District” published in 2009 was cited internationally on *International Journal of Forestry Research* (2010), *International Journal of Agricultural Sustainability* (2011), and *Natural Hazards and Earth System Sciences* (2012). Another article entitled “Estimation of Direct and Maternal Effects for Weaning and Yearling Weights in Bali Cattle” published in 2007 had been cited in *Livestock Science* (2011) and *ArchivTierzucht* (2013). Article ”Selection and Optimization Process of Bacteriocin Production from *Lactobacillus sp*” published in 2009 had been cited in *International Food Research Journal* (2013), *International Journal of Pharmaceutical Sciences Review and Research* (2013), *Asian Pacific Journal of Tropical Biomedicine* (2014), *Brazilian Archives of Biology and Technology* (2014), *Bulletin of Marine and Fisheries Post-harvest and Biotechnology* (2013), and *Journal of Biology* (2014).

Although local journals and national journals are not indexed by global citation databases such as by Thomson-Reuters Web of Science and Elsevier’s Scopus, it does not mean that the journal impact cannot be ascertained. Lokker (2012) reported that some journals have predicted and published their own Journal Impact Factor (JIF) for both internal use and solicitation of articles. Sutardji (2011) and Sanni and Zainab(2012) calculated impact factors of “*Jurnal Penelitian Pertanian Tanaman*

Pangan” and *Medical Journal of Malaysia* respectively. These impact factors calculations showed the importance of revealing impact factor of local or non-indexed journals on information quality assessment.

1. 1. 4. Context of the Study: Indonesian Agency for Agricultural Research and Development (IAARD)

The Indonesian Agency for Agricultural Research and Development (IAARD) is appointed by the government of the Republic of Indonesia to be responsible on national level of the country's agricultural research and development. IAARD is a Directorate General under the Ministry of Agriculture (MoA) established by the presidential decree No. 44 and No. 45 in 1974. Since its establishment, organization of IAARD experienced several organization changes. In 2013, IAARD organization managed IAARD Secretary, two Centers, 11 Research and Development Centers, 199 Research Institutes, one IAARD Office of Agricultural Technology Transfer, 31 Assessment Institutes of Agricultural Technologies. It also managed two Research Stations (Indonesian Agency for Agricultural Research and Development, 2013).

IAARD had proven the worthy of its contribution to agricultural development in Indonesia. The success of IAARD on conducting research was also supported by the availability of strong competency of human resources, structures, infrastructures, and budget. In 2013, IAARD had 7,780 personnel. Of the total staff belong to IAARD, 3,344 personnel (42.98 %) were researchers, librarians, engineers, computer specialists, archivists, technicians, statisticians, extension specialists, staff analysts, planners, and public relation officers. There were 397 personnel with doctoral degrees, 1,100 personnel with master degrees, 2,010 personnel with Bachelor of Science (BS) degrees and 4,273 personnel with lower than BS degrees qualification.

The success of IAARD is also attributed by the availability of its budget, structure and infrastructure. Indonesian Agency for Agricultural Research and Development (2013) reported that IAARD was given a budget of IDR7.13 trillion and supported by its 17 research institutions laboratories and 119 experimental stations with a total area of 4,617.94 hectare (ha).

1. 1. 5. IAARD Scientific Publications

IAARD disseminated their research findings through many channels. Indonesian Center for Agricultural Library and Technology Dissemination (ICALTD) is a center under IAARD that is responsible for disseminating IAARD research findings (Indonesian Center for Agricultural Library and Technology Dissemination, 2009). The media used includes radio and television programs, exhibitions, seminars, workshops, farmer gatherings, and publications. Meanwhile, ICALTD and other IAARD Centers also publish communication media in the form of books, proceedings, monographs, scientific and popular serials, and brochures/leaflets. The mentioned media channels were the primary media channels for disseminating research findings within IAARD institutions/researchers (Indonesian Agricultural Research and Development, 2009). Besides the role of IAARD publication for disseminating IAARD research finding, *Pusat Perpustakaan dan Penyebaran Teknologi Pertanian* (2009) also mentioned the use of the publication as exchange media for agricultural research institutions in the country as well as abroad.

IAARD publications are still the leading media communication used for IAARD research findings dissemination particularly within IAARD researchers and other scholars. Even online version of IAARD publications have been widely used by IAARD centers and institutes, printed publication as communication channel still plays

important role that have relatively low cost of production, wide area distribution, preserved for relatively long time, and able to be read at any time.

Accreditation on IAARD journals conducted by Indonesian Institute of Science (*Lembaga Ilmu Pengetahuan Indonesia*) awarded A to C scores for several IAARD publications (Pusat Dokumentasi dan Informasi Ilmiah (PDII-LIPI), 2012). According to Pusat Pendidikan Pembinaan dan Pelatihan Peneliti (2006) and Lembaga Ilmu Pengetahuan Indonesia (2011), the absolute score A is equal to 80 – 100 (*Sangatbaik*, Very Good), B is equal to 70 – 79 (*Baik*, Good) and C is equal to 60 – 69 (*Cukup*, Fair).

1. 1. 6. The Need for Assessment of IAARD Scientific Publications

IAARD published scientific journals which benefited researchers, extension workers, students, policy/decision makers, and other general users. They used IAARD journals to plan extension activities and preparing materials for extension for farmers (Mulyani et al., 2006). Researchers who wrote articles in *Jurnal Penelitian Pertanian Tanaman Pangan* also used IAARD journals for their research activities. This utilization was reported by Sutardji (2003) who stated that articles from IAARD had been cited in *Jurnal Penelitian Pertanian Tanaman Pangan* and in *Indonesian Journal for Agricultural Research and Development*. Impact factor calculation of *Jurnal Penelitian Pertanian Tanaman Pangan* (IF=0.30) by Sutardji (2011) also indicated the utilization of the IAARD journals. The IAARD journals utilization usually accompanied by high information quality of the cited journals that will ensure research, extension, and other activities which referred to IAARD journal received reliable information. Hence, researcher, extension worker, and other users will conduct their activities correctly. Utilization of IAARD journal mentioned above could become consideration of why information quality assessment should be conducted.

1. 2. Statement of the Problem

Researchers are both consumers and contributors to scholarly communication. They read, research, and publish in scholarly journals that serve their community, and articles in a refereed journal which are believed as more prestigious than those published in conference proceedings and monographs. Scientific journals play a central role in the dissemination of research results; at the same time the importance of scientific publication in advancing the careers of research scientists, has encouraged them to publish in top international journals. What is unquestionably the most important characteristic of scholarly communication, use and information seeking behavior, is the quality and reliability of the journals that carry the scientific information.

Most of the world's scholarly research communication is concentrated in a few scientifically and technologically advanced countries, where spending on research and development is the highest. The scientific world is divided into centres and peripheries, a demarcation that is typically seen as corresponding to the divide between the affluent, industrialized states of the northern hemisphere and the less well-off and technologically less advanced nations of the south. The quality of journals originating from these core countries can be assessed citation analysis, peer analysis, circulation and coverage in global indexing or abstracting services and many of them are indexed by international indexing databases such as the Web of Science and Scopus. Nonetheless, for a variety of structural and cultural reasons, the so-called 'newly industrialized' countries (NIC), such as India, Iran and China, are on the periphery of world science, too. These countries have their homegrown abstracts and citation database, with multidisciplinary objective knowledge contents from their many top scholarly journals, such as the Indian Citation Index, Islamic World Science Citation database and Chinese Science and Social Science Citation database.

Clearly then, peripheral countries such as those in the Southeast Asia merit investigation – this means we shall not only be able to determine how scholars from the periphery characteristically behave in regard to assessing quality and reliability of journals, but also to determine whether they act differently with regards to journals that originate from the peripheral countries. Thailand and Malaysian governments clearly stated the importance of building up a scientific and fair evaluation system of national scholarly journals and the urgency to speed up the development of a citation index system, initiated the establishment of the Thai Citation Index (TCI) and Malaysian Citation Index (MyCite) respectively. With both systems in place and running, authors and researchers in these two countries are able to ascertain the quality and reliability of their national journals that are not indexed in the Web of Science and Scopus based on citation data, since authors tended to consider firstly the reputation of the journal by using the impact factor, followed by international reach and coverage by abstracting and indexing services (Swan and Brown, 1999; Salager-Meyer, 2014).

However, the question asked of “How can I tell if Indonesian-based journals are of good scholarly worth and what is their impact” – this cannot be ascertained due to a non-existence tool that can assist in identifying the impact score for the journals, according to the citations that are received. The number of journals published in Indonesia which is indexed by Scopus are also low, and none are indexed in the Web of Science. Up to February 2014, the number of journal indexed in Scopus is only 17 journals. None of the journals indexed are published by IAARD. However, many articles in IAARD journals had been cited internationally. A search on Google Scholar revealed that the Indonesian Journal for Agricultural Science had been cited 59 times, and 14 times in Scopus. Another journal, *Jurnal Ilmu Ternak dan Veteriner* had been cited 395 times in Google Scholar, and 28 times in Scopus.

Related to the non indexed IAARD journals, assessing the impact of these journals is a challenge. This is due to the fact that the journals are not easily available and most of them are published in the local language. The only indexing services provided by Directorate General of Higher Education, Indonesian Ministry of Education did not include IAARD scientific journals into the list of their indexed journals. The absence of information related on the quality of IAARD journals are categorized as follows:

- a. Assessing the quality of Indonesian agricultural journals;
- b. Determining how Indonesia-based agricultural science researchers assign and calibrate trust to these journals;
- c. Determining how Indonesia-based agricultural science researchers assess the usability of these journals.

Even if there is an availability of journal assessment for these IAARD journals, one should bear in mind that no single metric can address all relevant quality and reliability indicators. Moreover, while a particular metric might be useful for one subject matter, it might be quite inappropriate for another, especially in the context of journals from aspecific discipline i.e. agricultural science, published by a government agency in Indonesia. To address the concerns about the indicators for assessing journals, we aim to fill the gap with this study. Although our method is only applied to agricultural science journals, it is general enough to evaluate the quality and reliability of journals in other disciplines.

1. 3. Objectives of the Study

The purpose of this study is to determine which journals are most essential to a particular discipline i.e. agricultural science. In view of the above problem, this study intends to address the following research objectives:

- a. To assess the quality of Indonesian agricultural journals based on bibliometrics approach;
- b. To determine how Indonesia-based agricultural science researchers assign and calibrate trust to the journals they use;
- c. To determine how Indonesia-based agricultural science researchers assess the usability of the journals they read;
- d. To produce an internal ranking of the Indonesian agricultural journals based on (a), (b) and (c);
- e. To compare and contrast the internal ranking of Indonesian agricultural journals based on (a), (b) and (c) using gap analysis.

1. 4. Research Questions

The following research questions have been formulated to address the above research objectives:

- a. What is the quality of Indonesian journals based on productivity and impact indicator?;
- b. To what extent do Indonesia-based researchers trust the agricultural science journals that they use?;
- b. To what extent do Indonesia-based researchers assess the usability of the agricultural science journals that they read?;
- c. What is the internal ranking of the Indonesian agricultural journals based on quality, trust and usability indicators?;
- d. How does the internal ranking differ based on quality, trust and usability indicators?.

1. 5. Significance of the Study

The study reveals characteristics and information quality of IAARD journals. The study

also provides input for decision makers to set up policies related to IAARD journals. For library and information science knowledge, the research finding would enable them to: a) Strengthen bibliographic and citation analysis studies with information regarding agriculture in Indonesia and b) Strengthen existing methodology on information/journal quality determination using combination of bibliographic and citation analysis with end user's satisfaction.

With regards to the journal management, findings of this research assure information quality improvement of IAARD journal by providing input regarding to the weaknesses of the journal. Indonesian Scientific Knowledge Center assessed IAARD journals in journal accreditation and resulted that only 3 of 9 journals accredited A. The journals are Indonesian Journal for Animal Science and Veterinary, Indonesian Journal for Agricultural Science and Indonesian Journal for Agro Economics. Other journals are accredited B and C. These journals are open for improvement.

The research finding could be an alert for journal management to improve international contributions. The journal management should encourage the increasing number of international authors to contribute in the journal. The contributing international authors will determine the success of the journals in improving journal quality. Providing articles in international language (English) encourage international authors to contribute in these journals. The low citation of a journal article reflected that utilization of the journal is also low. This fact should be attracting attention of the journal management. The management should find ways to increase the low citation of the journals.

IAARD journals improve scientific recognition of organization through publishing of qualified journals. In this context, IAARD will be benefited from the journal quality if

the journal reached the highest level of information quality. Indonesian Scientific Knowledge Center gives equal status for Indonesian journal to international journal for journals with highest accreditation score (Lembaga Ilmu Pengetahuan Indonesia, 2011). With the input of this research, decision/policy makers encourage and support journal management to obtain highest score of accreditation that also affect scientific recognition of IAARD journals. This also means that corporate image of the journal publisher will increase due to availability of their high qualified journals.

Findings on agricultural commodities and field of knowledge in this research will help decision/policy makers to decide which research on certain commodities or field of knowledge are worthy to be continued. If the research was saturated with certain commodities or field of knowledge, this is the time of the decision makers to prioritize a certain subject of research.

IAARD collaborates with other institutions on agricultural researches. The research budget could be shared between the institutions or fully utilized by IAARD, even research proposals may come from different institutions. In this case, decision/policy makers could avoid redundancy of proposed researches by the institutions. Combining information related to journal title with commodities and field of knowledge will filter the similar researches. Using this information, the decision/policy makers can decide whether the similar research proposals will be dropped or will be combined.

Incentives on researches done are given to outstanding researchers in the form of rewards. Committee members select researchers based on many ways. One of the main criteria of the selection is based on the productivity of the researchers. The

measurement of the researcher's productivity can be assessed by counting the numbers of articles published in a certain period of time. This selection process will also provide findings related to researcher's productivity. In accordance to the availability of researcher's productivity information of the research, the findings will support the selection of the most productive authors that will be rewarded. On the other hand, the researchers who cannot meet the required level of productivity should be penalized.

The findings of this research will benefit scholars in the field of library and information science. The scholars may use the findings to prevent redundancy of future researches. The scholars can match the titles in their proposals to the list of citing and cited articles. If there are similarities of titles in the proposals with the titles on the citing or cited articles, it is clearly proven that there is a redundancy of the research titles. The scholars then, can reject or revise their proposals.

The scholars also will be able to utilize the research findings on their research proposals or in their research reports. Scholars prepare proposals before they conduct their researches. In preparing proposals, scholars need input from previous researches and using them for writing literature reviews. They also will be able to use the research findings to set up theoretical frame works. When they finished their researches, the findings will still be needed to support writing of literature reviews and discussions. In a discussion part, they use earlier research findings as comparison to their researches.

Librarians keep abreast of this type of research findings in order to update policies on building library collections. They can use cited publications as the core journal and add on to the collection. In contrast, the research findings of the related years cited can be utilized to replace the old collection.

1. 6. Scope

The scope of the study covers:

- a. The research assessed nine (9) IAARD scientific journals published within the year of 1995-2010. Most of the journals had been first published in 1982 except for *Jurnal Hortikultur* (1990); *Jurnal Ilmu Ternakdan Veteriner and Jurnal Penelitian Tanaman Industri* (1995); and *Jurnal Enjiniring Pertanian* (2003). Most researchers varied their researches in a span of 2 to 12 years. Sutardji (2011) investigated 2 year period of publications; Hadimani and Rajgoli (2010), Fasae (2011), and Ezema and Eze (2012) investigated 8 years of publications; Zainab et al. (2012), Dixit and Katare (2007) and Azevedo et al. (2010) investigated 10 years; and Kumar and Kumar (2008) investigated over 12 year period.
- b. Materials used to determine the information quality and its impact to the research reports obtained from IAARD journals published between 1995 to 2010. The period was chosen based on the synchronization of the cited journals and citing journals where most journals will be cited as soon as they were published. Thus, the journals published in the beginning of 1995, will be able to be cited several months after they were published in the same year.
- c. The respondents were researchers from agricultural related fields in IAARD and also from Gadjah Mada University (Indonesia). Expert survey method was used for evaluating journal quality assessment on the respondents. Selection of the respondents was based on the institutions that received IAARD journals as this would enable the respondents to answer the research questions appropriately.

1. 7. Definitions

Terminologies using in this dissertation include the key terms defined below:

- a. Information quality is information that is fit for use by information consumers (Yung-Pin, 1996). Meanwhile, English (2001) defined information quality as consistently meet the workers' knowledge and customers' expectation.
- b. Publication quality assessment is an effort of using evaluation tool to predict information quality of a publication. The tool could be: a) individual author or article citation; b) institution lists; c) peer surveys; d) citation studies; and e) derived lists (Morris, Harvey, and Kelly, 2009; Ali, Young, and Ali, 1996; and Reinstein and Calderon, 2006). Life Science Network (2014) rated publications using 3 categories namely: a) publication quality (written and language, figures and tables, results, and conclusions); b) Technical soundness (methods and procedures, and analyses), and c) Scientific impact (new and valuable findings with potentially great and broad impact).
- c. Scientific journal is a paper describing scientific research results, which has undergone some form of anonymous peer-review and published in a regularly appearing serial, usually by a third party publisher and not by the university of the author - Bjork, Roos, and Lauri (2009).
- d. Trust in a general context is a firm belief in the reliability, truth, ability or strength in someone or something. When readers trust a scientific journal, it means that the readers believe that the journal is authoritative and able to fulfil the information needed by them. Trust of a journal can be assessed using content analysis by looking at the validity, credibility, and reliability of the provided information. Measurement of credibility and reliability can be carried out by assessing its dimension using survey (Gorla et al. (2010); Lee (2010); Alkhatabi (2011); Cohen (2011), I-Chiu et al. (2012); Chang et al. (2012)
- e. Usability is defined as how easy and pleasant the feature of a system was to be used (Nielsen, 2012). In a journal context, the definition should be how easy and pleasant the journals' features are to be used. Usability measured in this study is by

conducting survey using 4 attributes for journal usability: namely Journal Reading;Obtaining Time, Articles Read, and Reading.

- f. Indonesian Agency for Agricultural Research and Development is a second tier agency under the Ministry of Agricultural, Republic of Indonesia which is responsible for agricultural research and development in Indonesia.

1. 8. Organization of the Report

This report is presented in five chapters. Chapter 1 presents the backgrounds of the research, problem statements, research questions, objectives, scopes and limitations, definitions, and report organization of the research. The second chapter (Literature Review) comprises the nature of publication, concept and benefit of information quality, and assessment of information quality of publication. Meanwhile, the third chapter details the research design and method employed in the research. This chapter also discusses steps using bibliographic and citation analysis approach and end user's satisfaction approach for determining characteristics, information quality, ranking, and comparison of the applied methodology on assessing information quality and ranking of IAARD journals. Research findings resulted from the previous chapter are discussed in the fourth chapter. The chapter is divided into sub chapters that discuss findings related to quality, trust, usability and ranking of IAARD journals. It also discloses results on comparative study of the three methods. Conclusion of the findings and discussion on the fourth chapter are presented in the fifth chapter. The chapter summarizes the core of the research findings, highlights contribution and identifies limitations, as well as provides directions for future research.