Open Journal System (OJS) as An Office Automation Model

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ABSTRACT

The phenomenon of the COVID-19 pandemic forces the world community to transform into the world of work through the implementation of work from home. Many offices, especially in Indonesia, make use of various information systems and applications to facilitate work. Automation studies in the office environment are being studied again. The classic problem faced by most offices in Indonesia is that the automation system used is not integrated, one of which is the filing system. Most filing systems are limited to storing databases and tracking information. The archiving system model that is considered integrated, not limited to database storage and information retrieval, is the open journal system used by Indonesian national journals. This study aims to analyze the open journal system as a model for implementing the concept of office automation. The research object used is the open journal system used by accredited national journals in the social and humanities field. Data obtained through participatory observation of the open journal system used, in-depth interviews with journal managers, and literature studies. The data were processed and analyzed using the data triangulation approach. The results showed that the open journal system is an implementation of the concept of comprehensive office automation. However, it is necessary to conduct a study regarding the security and authentication of the metadata that is created on the system.

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INTISARI

Fenomena pandemi COVID-19 memaksa masyarakat dunia untuk bertransformasi ke dunia kerja melalui penerapan work from home. Banyak perkantoran khususnya di Indonesia yang memanfaatkan sistem aplikasi informasi untuk memudahkan pekerjaan. Studi otomasi di lingkungan kantor dipelajari lagi. Permasalahan klasik yang dihadapi sebagian besar perkantoran di Indonesia adalah sistem otomasi yang digunakan belum terintegrasi, salah satunya adalah sistem pengarsipan. Sebagian besar sistem pengarsipan terbatas pada penyimpanan database dan informasi pelacakan. Model sistem pengarsipan yang dianggap terintegrasi, tidak terbatas pada penyimpanan database dan pencarian informasi, adalah Sistem Jurnal Terbuka yang digunakan oleh jurnal nasional Indonesia. Penelitian ini bertujuan untuk menganalisis Sistem Jurnal Terbuka sebagai model penerapan konsep otomatisasi perkantoran. Obyek penelitian yang digunakan adalah Sistem Jurnal Terbuka yang digunakan oleh jurnal nasional terakreditasi bidang sosial dan humaniora. Data diperoleh melalui observasi partisipatif terhadap sistem jurnal terbuka yang digunakan, wawancara mendalam dengan pengelola jurnal, dan studi pustaka. Data diolah dan dianalisis dengan menggunakan pendekatan triangulasi data. Hasil penelitian menunjukkan bahwa Sistem Jurnal Terbuka merupakan implementasi dari konsep otomasi perkantoran yang komprehensif. Namun perlu dilakukan kajian mengenai keamanan dan autentikasi terhadap metadata yang dibuat pada sistem.

KATA KUNCI:
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INTRODUCTION

The Covid-19 pandemic entered Indonesia at the end of 2019. Its increasingly uncontrolled spread has caused many sectors of life to experience paralysis. The government, in an effort to control the spread of the virus, enforces work from home and school from home. This step was taken to continue to assist the community in meeting their basic needs. The work from home policy has become a new normal in various office institutions. Office automation is becoming increasingly massive. According to O'Brien (Sukoco, 2007) office automation is "a telecommunications-based information system that collects, processes, stores and distributes messages, documents and other electronic communications among individuals, work groups and organizations". In this definition, office automation is identified with the use of technology in the form of an information system that manages documents as well as acts as a communication medium for human resource elements in an office. A similar perspective was also put forward by Gie (Sukoco, 2007) who explained that automation is a setting that uses high-speed machines. Machines in this case refer to information system technology which is now widely used so that the human role is limited to controlling the machine. If it is based on the two definitions, one form of office automation in relation to the information and documents sector is archival automation. In practice, archival automation is identified with managing electronic records through certain information systems so as to achieve the effectiveness and efficiency of archiving work, especially by the organization that creates records.

The paradigm that underlies the management of electronic records is ideally different from the paradigm that is the basis for managing textual records. However, the problem that occurs is in the management of electronic records, especially in some institutions in Indonesia that still adhere to the principles of managing textual records. The impact is that the information system developed by archival institutions is still limited to means of storing data and retrieving information recorded in archives. As for the aspects of authentication and long-term preservation of electronic records, it has not become a special concern of archival information system developers. This results in the authentication of records that still use manual methods (signature or wet stamp), that is, the files are printed to be authenticated, and transferred into electronic form to be processed again in the system. This problem is certainly a challenge in managing electronic records during a pandemic which limits the movement of human resources in open space. The next problem is the absence of shrinkage activity in the archiving system, which means that if the archive is to be depreciated, it must be in a printed condition. This of course is not in line with the paperless office principle which requires reducing paper use. In addition, the continued impact of the archival information system which is still limited to the location of storage is the inconsistent track record of electronic records because it combines system-based archive management methods with textual-based records management methods. This problem can have an impact on the integrity of the electronic records itself, especially on the metadata aspect. Therefore, automation modeling is needed which can be an example for the improvement and development of the archiving system that has been built. Automation modeling referred to in this paper is automation of archiving in national journals.

The paradigm that underlies the management of electronic records is ideally different from the paradigm on which the management of textual records is based. However, the problem that occurs is in the management of electronic records, especially in some institutions in Indonesia that still adhere to the principles of managing textual archives. The impact is that the information system developed by archival institutions is still limited to means of storing data and retrieving information recorded in document. As for the aspects of authentication and long-term preservation

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The purpose of this paper is to describe the automation model of filing in national journals in the social and humanities field. (Sulianta, 2017) conducted a study by testing the administrative selection process for hiring PT XYZ employees to fill marketing, production and administration positions, which were created using a pseudo database application. The pseudo database application is created using excel and programming code that is identical to the Visual Basic Application (VBA) programming language, which is designed to be easily understood by users. The results of this study prove that the use of an office automation system by applying a pseudo database provides several benefits including: minimizing processing time to be more efficient. Standardization made by programming keeps the work structure on the worksheet maintained so that it can increase work productivity, can reduce errors, and can handle various types of data.

Different perspectives regarding office automation system research are presented (Yusuf et al., 2020). Office automation systems (SOK) are applications that are used to create, modify and communicate information that occurs in companies or offices in increasing worker productivity. The research was conducted through a questionnaire distributed to 40 front office, academic and student affairs employees who often use office equipment. The results of the study obtained 28% which stated that employee performance was influenced by the automation system, while 72% said that employee performance was influenced by other variables outside the study. Therefore, it can be concluded that the increase in work effectiveness is not fully influenced by system changes.

Specifically in the field of information, the real form of an office automation system is a filing system. The rapid development of technology also requires the field of archives to adapt to its development. The maximum possible use of technology is used as an effort to increase work effectiveness in the field of records management. To prove this, research has been carried out by (Mulyadi, 2018) regarding the effectiveness of the Records Information System (SIKD) as a means of retrieval of archives. The research was conducted using qualitative research methods. Sources of research data obtained from observations of in-depth interviews and documentation. Research with a total of 50 respondents, 95% stated that they were motivated to search for archives using the Records Information System (SIKD) and 97% of respondents said they were satisfied if the service was carried out using the Records Information System (SIKD). Based on the results of this study, it can be said that the Records Information System

(SIKD) is needed in carrying out archive services because it can speed up the search for the required records.

Apart from Mulyadi, research on archival automation has also been carried out by (Kurniadi & Rahmah, 2018). The study suggests the application of arterial applications. According to Erwan (Kurniadi & Rahmah, 2018), arteri is a web-based application that can be developed mobile using the GNU version of the license, which is designed to integrate archives electronically. The research on the application of arterial applications was carried out using descriptive methods, namely by collecting data directly from the original source. The results of the research that has been carried out, the application of the arterial application at the Office of Library and Archives of Sungai Penuh City has not been fully implemented because there are several obstacles faced including: the unavailability of wifi facilities that can be accessed by visitors, the unavailability of a special scan machine for transferring archive media, and lack of human resource capacity to operate arterial applications. To maximize the use of the archival automation system, other supporting factors are also needed so that it can increase the effectiveness and efficiency of managing digital records.

The purpose of this paper is to describe the automation model of filing in national journals in the social and humanities field. National journal archiving uses the open journal system (hereinafter referred to as OJS). The Open Journal System is a platform used to manage scientific journals online. Because the platform system is online based, the paperless office principle can be applied optimally. The study of OJS, especially in the context of journal management, is still limited to a computer science perspective. (Willy et al., 2017) measured the level of objectivity of peer-reviewer reviews with an algorithm (Natural Language Toolkit) with the Python instrument. A user-friendly study was also carried out (Setiadi et al., 2019) which recommends features for selecting articles according to readers' needs. This feature is built on the basis of Content-based Filtering which is taken from the metadata of article documents, such as titles, keywords, and journal scope. (Fajrin et al., 2018) describe the technical installation and implementation of OJS on a Local Area Network (LAN) with the Ubuntu Linux operating system. This research focuses on OJS studies from the perspective of archival science. Apart from the user and installation aspects, (Lingga Wijaya & Putra, 2020) conducted a study related to evaluating the use of the OJS website with the Webqual method. This method evaluates OJS from three perspectives, namely usability, information quality, and services interaction quality. This paper examines OJS national journals from the perspective of archival science, namely analyzing business processes and information produced from these processes as national scientific journal archives.

The research question of this study is what is the automation model for archiving in OJS-based national journals?

RESEARCH METHOD

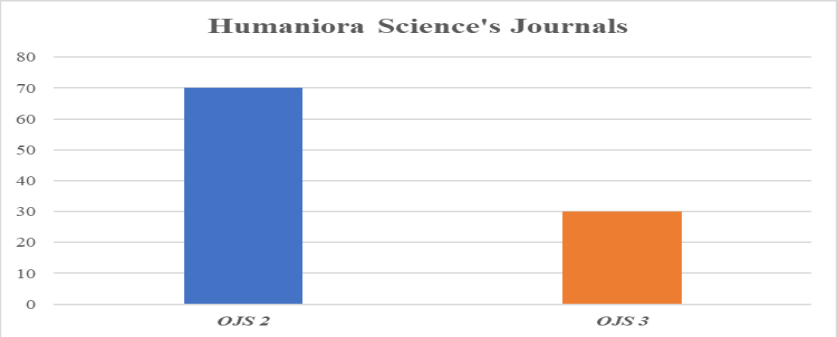
This paper is an assessment of research on automation systems of records using participatory observation methods. Participatory observation is carried out by observing directly the business processes in OJS scientific journals, interviews with manager journals and literature studies or review of primary and secondary sources. The data is processed using data triangulation techniques, namely the data is sorted based on the collection technique. The data is then analyzed for accuracy and credibility by synchronizing the data from observations, interviews and literature reviews. The next stage is organizing the data which is accompanied by giving meaning to the context of the data. The final stage is interpreting the data obtained so that it can produce valid conclusions.

RESULT AND DISCUSSION

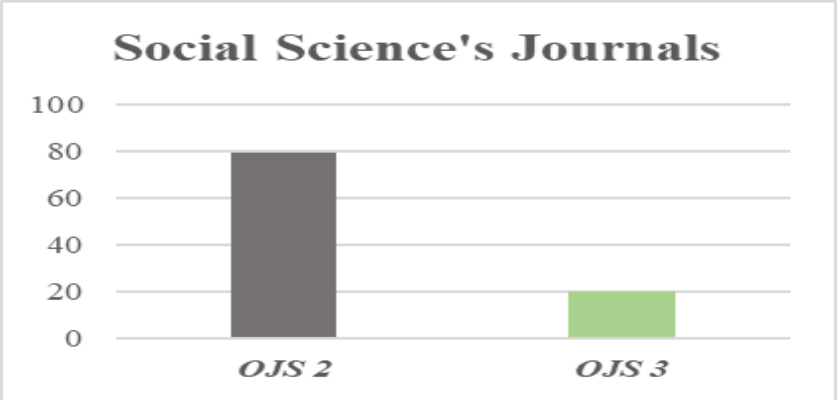
The Open Journal System (OJS) is known as an open source platform that functions as an information system for managing scientific journal publications. The existence of this platform makes it easier for journal managers to manage and control the consistency and quality of published journals. (Nashihuddin, 2020) mentions the benefits of OJS for journal managers, including: 1) without large capital for installation and operation because it is open source and cloud computing systems; 2) delivery of manuscripts without postal costs; 3) increasing the culture of scientific communication to ask each other and comment; 4) cost-effective publication and mass dissemination of journals to the global community; and 5) enhancing the webometrics of institutions nationally and globally. Open Journal System (OJS) was developed by the company OpenJournalSystem.com located in Arizona, United States. Until 2020, OJS has been developed to version 3.X. The mapping of the use of OJS in Indonesia, especially in national journals in the social and humanities fields, can be seen in graph 1 and graph 2. If it is based on the two graphs, the national journals in the social and humanities sector still use OJS 2 as their journal management platform. Therefore, this paper is focused on the OJS 2 based automation model.

In managing OJS-based journals, things that need attention are related to the division of roles (roles). According to (OpenJournalSystem.com, n.d.) the main manager of OJS-based journals and their duties include: 1) Site administrator, is responsible for the entire OJS system installation, ensuring the accuracy of system settings, language settings, and adding journals to the OJS system that is already installed. The main duties of the site administrator are divided into two, namely managing the OJS system and managing the OJS administration. OJS system management includes overall OJS system settings (not per journal system), such as OJS system names, OJS system descriptions, OJS system-related contact information, security settings with passwords, language settings, setting elements per journal, and so on; functions as hosted journals, namely as the coordinator of all journals that use OJS which manages general information related to journals connected to the OJS system. As for OJS administrative management, including cleaning the portal from caches, controlling system upgrades, and controlling users; 2) Journal manager, responsible for managing the OJS system in each journal, performing system configuration, and managing user accounts. Basically, the journal manager position does not require expertise in complicated information technology because its function is still limited to uploading documents and filling out forms in the OJS system. In general, the main duties of a journal manager consist of managing journal pages, managing users, and managing each role in an OJS journal. Journal page management refers to configuring a journal's portal, policies, and business processes. In addition, the journal manager is also in charge of publishing updates, managing electronic mail, controlling the availability of reading facilities, and monitoring journal visit statistics; 3) Author, refers to the manuscript writer for a particular journal; 4) Editor, controls the entire business process from a journal (review, editing to publication). In addition, the editor, together with the journal manager, establishes journal policies and procedures. In relation to the editing process, the editor appoints a section editor to select and review the quality of the manuscripts that enter the journal editorial desk. The editor is also responsible for publication numbering, publication periodization, structuring the table of contents, and coordination with journal publishers; 5) Section editor, is responsible for evaluating the quality of the manuscript that has been distributed by the editor; 6) Reviewers, are responsible for evaluating the quality of the manuscript according to their expertise; 7) Copyeditor, in charge of evaluating the quality of the manuscript from the grammatical

aspect and adjusting the manuscript to the style of the journal environment; 8) The layout editor is in charge of changing the format of the manuscript that has been evaluated in content and grammar and selingkung style, into a ready-to-publish manuscript (galley); 9) Proofreader, tasked with re-evaluating manuscripts that are ready to be published; 10) Reader, refers to journal readers, both subscribers and readers of certain articles.



Graph 1. OJS' Users in Humaniora Science
(Source: Researchers' Analyzes, 2020)



Graph 2. OJS' Users in Social Science
(Source: Researchers' Analyzes, 2020)

Whereas if it is based on the Guidelines for the Editorial Management of Scientific Journals published by the Ministry of Technology Research / National Research and Innovation Agency in 2020, the journal manager consists of an editorial team and a support team. The editorial team consists of (Lukman et al., 2020): 1) The chief editor is in charge of controlling the consistency of the published publication period by ensuring a sufficient number of quality manuscripts and according to the style of the journal environment; selecting and determining the editorial board; coordinate with the editorial board regarding journal development; and public relations functions; 2) Section editor, in charge of evaluating the manuscripts that enter the editorial table; selecting peer reviewers for further evaluation; and discussing with the editor-in-chief to decide on the feasibility of publishing the evaluated manuscript; 3) The editorial board refers to peer reviewers who are in charge of evaluating journal manuscripts according to their expertise; provide suggestions and considerations in case of publication violations; and participate in providing consideration for the feasibility of publishing the manuscript; 4) Technical editor, which consists of a language editor and a layout editor that helps evaluate grammar and layouts a script that is declared worthy of publication; 5) Information Technology Team (Journal Manager).

The support team from national level scientific journals (Lukman et al., 2020) includes: a) Consult with the Editor / Editorial Board on the technical strategy of journal management; b) Conduct technical analysis of market trends and competitions related to journal science; c) Communicate publication policies and procedures and their development to the public; d) Manage journal / publisher finances including fees and honoraria; e) Technically and officially do correspondence to invite and dismiss the Editor / Editorial Board; f) Technically perform statistical analysis of journal visitors / readers, journal citation information and metrics, analysis of author satisfaction, and controlling the publication schedule to be discussed in the meeting forum and making meeting invitation letters; g) Technically managing the Special Issue plan in coordination with the Editor and Editorial Board; h) Assisting technically events where the journal is involved; i) Technically managing questions from the public regarding journal policy; j) Serve as the journal's main technical contact. 2) The production team, which is in charge of managing business processes in OJS together with the editorial team. 3) Marketing team, which is responsible for marketing and journal information.

In general, the business process of an OJS-based scientific journal can be observed in the roles of the editorial team as shown in Figure 1.In the context of national journals, business processes refer to the flow of manuscripts that are guided by the Guidelines for Editorial Management of Scientific Journals (figure 2). The scientific journal business process refers to the activities when a script writer submits a manuscript through OJS until the manuscript is declared fit for publication. At each stage in the business process, of course, there is communication and exchange of information between the roles recorded in the OJS system. The recorded information is the main basis for assessing the quality of content and managerial scientific journals, both for the purposes of accreditation of scientific journals and national and international indexation.

Graph 3. Capture of Business Process on National Journal's OJS
(Source: Researchers' Analyzes, 2020)

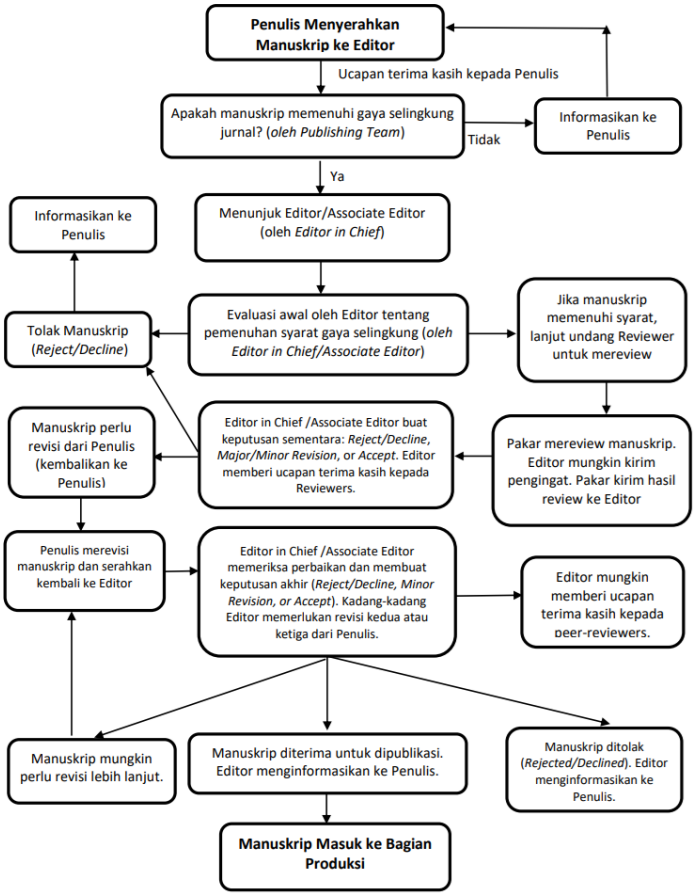


Figure 2. Capture of Publication Flowchart of Scientific National Journals
(Source: Lukman dkk, 2020)

The business process for the publication of OJS-based scientific journal manuscripts analyzed in this paper refers to the pure business processes that exist in the OJS system, namely Submission, In Review, In Editing, and Archives. In the context of the archive life cycle, the submission stage refers to the creation / capture stage. Information created and captured in OJS is categorized as a record if it meets the following requirements (Franks, 2018): 1) Authenticity, refers to the information created used as evidence of a transaction or business process, fulfills the provenance principle (origin, clearly the creator of the information), and it is clear when it was created. This aspect of authenticity can be seen in the metadata of the OJS system information record; 2) Reliability, related to the information recorded is an accurate image of a fact that can be proven its validity. This aspect can also be observed from the metadata in the OJS system; 3) Integrity, related to the completeness and consistency of information records. In this case, neither the information nor the metadata have changed in the OJS system; 4) Usability, the information record can be detected where it is stored so that it can be used.

At this stage, the journal manager (editor) evaluates the metadata that has been made by the author and the submitted manuscript. According to Franks (Franks, 2018), metadata describes *"...the content, business context, structure (e.g.form and format), relationships with other records and other metadata; identifiers and other information needed to retrieve and present the record; and the business actions and events that involved the record throughout its existence"*. Metadata evaluation aims to validate the author's baseline and the essence of the manuscript content. As for the evaluation of the submitted manuscript by synchronizing the style of the journal environment. The metadata that appears in the OJS section of the manager can be seen in Figure 3.

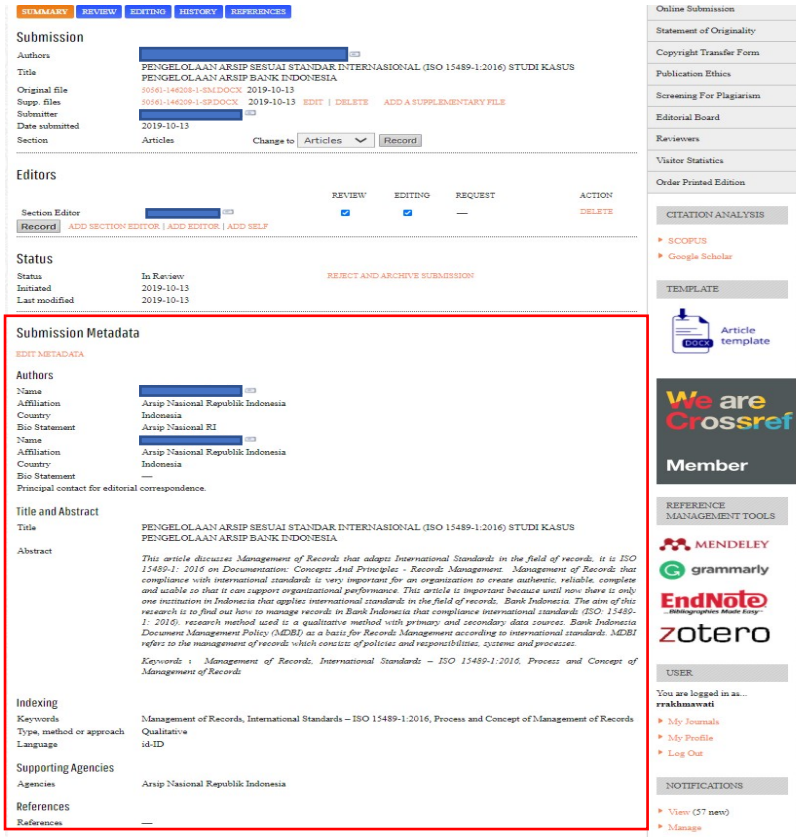


Figure 4. Capture of In Review Business Process
(Source: Researchers' Analyzes, 2020)

After being declared in accordance with the template and style of the journal environment by the editor, the manuscript is submitted by the editor for a review process of the substance of the manuscript. At this stage, there are some journals that evaluate the manuscript by the editor section together with the peer reviewer (editorial board), while some other journals evaluate the manuscript separately. During the In Review stage, communication occurs between the section editor, reviewer, and author. This communication results in the exchange of information in the form of manuscript documents and comments as can be seen in Figure 4. The dynamics of exchanging information is recorded automatically by the system down to the time aspect (date, month, year). In the archive life cycle concept, the In Review stage refers to the use and maintenance phase or processing of records and disposal (depreciation). Information recorded in the system is classified based on roles and chronology (date, month, and year). The depreciation phase refers to the final action activity related to the manuscript that has been evaluated, both by the section editor and peer-reviewer. The final action broadly consists of accepted and rejected. If a manuscript is decided to be rejected, the process will stop. However, if the text is declared accepted, there are two options for sub-actions, namely accepted with minor revision or accepted with major revision.

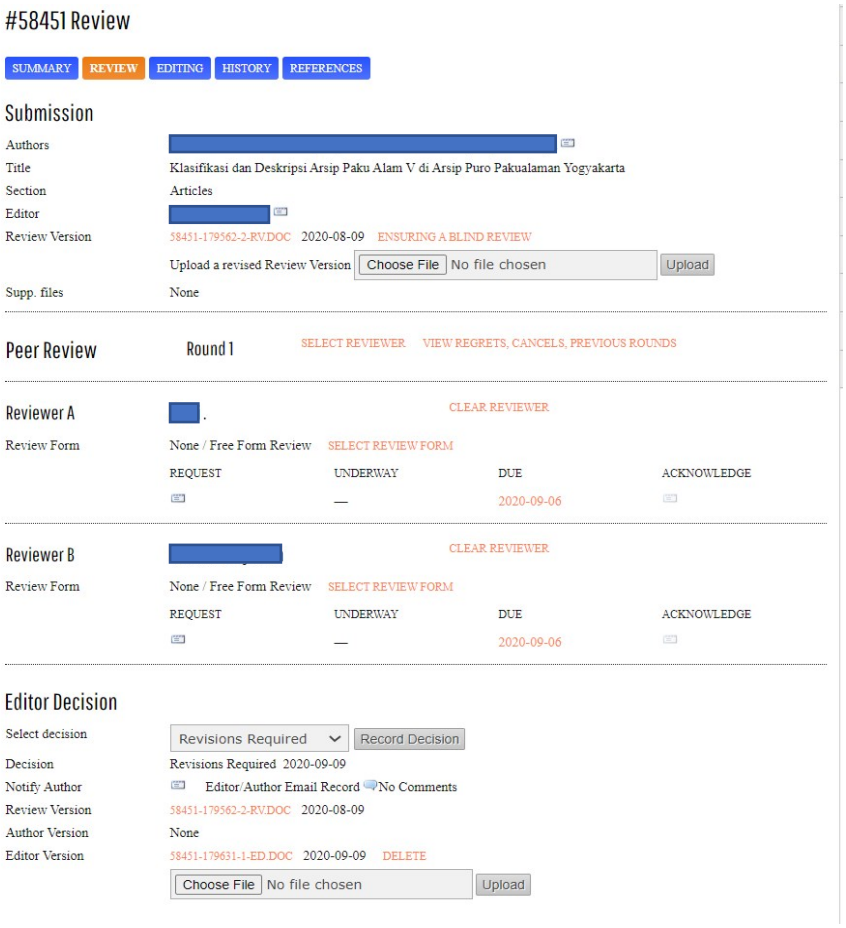


Figure 4. Capture of In Review Business Process
(Source: Researchers' Analyzes, 2020)

A common obstacle at the in review stage is that peer reviewers are still not familiar with how the OJS system works. This is as faced by the manager of journal X in a state university that:

> "Apabila *reviewer* tidak paham bagaimana menggunakan sistem OJS, kami (*journal manager*) yang harus mengunggahkan setiap naskah yang akan maupun selesai direview. Jadi komunikasinya ya masih dengan e-mail juga. Kalau tidak diunggahkan nanti tidak ada rekam aktivitas. Padahal rekam aktivitas ini juga dinilai saat akreditasi" (In-depth Interview on 14th August 2020, 16.00 WIB by Google Meet).

After the manuscript is declared complete through several revisions and adjustments in accordance with the direction of the journal editorial team, the next business process is in editing. Roles communicates at the in editing stage, including: copyeditor, layout editor, author, journal manager, and proofreader. The information recorded at this stage is still in the form of documents and comments as can be seen in Figure 5. The dynamics of communication between roles are carried out to ensure that the manuscript meets the grammar standards of scientific journals and journal templates. When contextualized with the concept of the archive life cycle, the in editing stage refers to the archive acquisition phase. Manuscripts that have gone through the in -editing stage are then published by the journal manager by creating a filing repository in the OJS system in the form of volume and publication numbers, as well as a manuscript tracking label in the form of a DOI (Digital Object Identifier). The existence of DOI makes it easy for readers to immediately find certain manuscripts that have been archived in the journal's OJS system. Apart from being based on volume and publication number, the classification of manuscripts in the OJS system is also based on

the chronology of the manuscript published (date, month, year) as can be seen in Figure 6.

Figure 5. Capture of In Editing Business Process
(Source: Researchers' Analyzes, 2020)

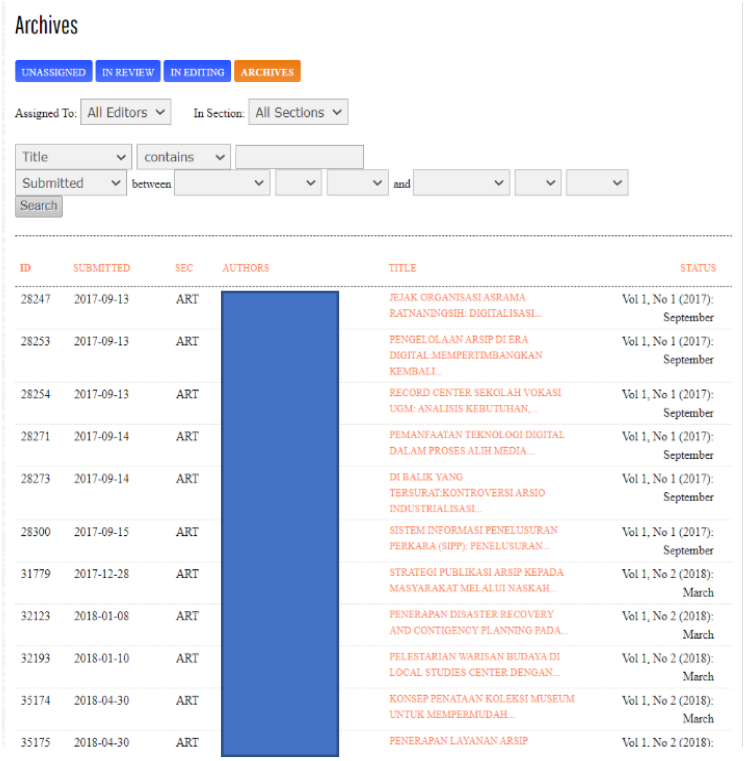
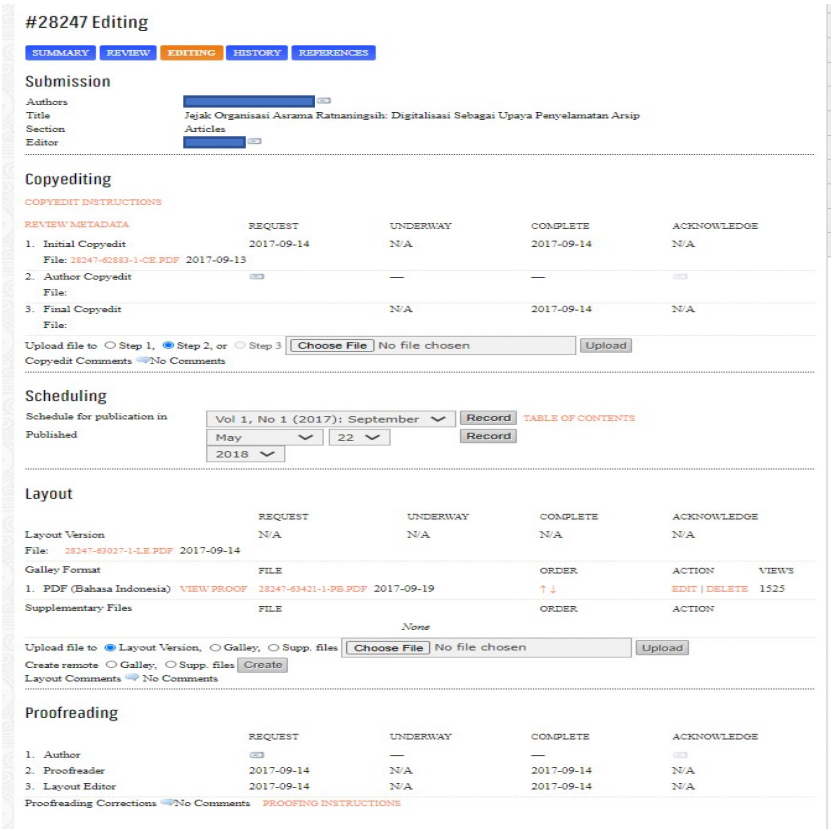


Figure 6. Capture of Archives Business Process
(Source: Researchers' Analyzes, 2020)



CONCLUSION

The Open Journal System (OJS) is a scientific journal automation system to facilitate the business process of publishing manuscripts. The OJS system that is still dominantly used by scientific journals at the national level is OJS version 2.x. Common business processes found in the OJS system are Submission, In Review, In Editing, and Archives. At each stage in the business process a record of information is generated, either in the form of a manuscript document or a commentary. The dynamics of communication between roles in business processes are recorded on a chronological basis (date, month, and year). The scientific journal business process with the OJS system can be concluded as an implementation of the paperless office principle and can be a model for archiving automation.

The research limitation in this paper is the scope of journals that are still focused on national journals in the social and humanities field with the OJS version 2.x system. Therefore, a wider coverage is needed by comparing the OJS version 3.x. In addition, a study is needed to analyze the security and authentication aspects of the metadata area of each document. Security and authentication aspects are vital in managing records, especially when using information systems, both cloud-based and non-cloud servers.

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