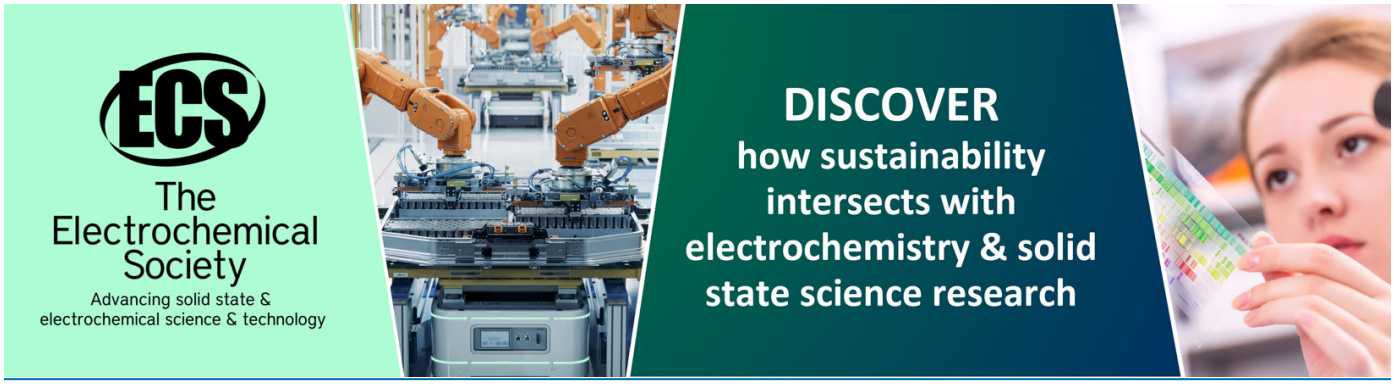
The development and analysis of an information system for incentives publication of reputable indexed international journal and national journal (Case study State Polytechnic of Malang)



The development and analysis of an information system for incentives publication of reputable indexed international journal and national journal (Case study State Polytechnic of Malang)

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Abstract. The research activities in The State Polytechnic of Malang addressed to achieve the output as articles, intellectual properties, and product innovations. The incentives are given to the researchers who publish articles in reputable publishers due to increasing the articles in both numbers and quality. In this work, an information management system of publications is developed and analysed. The system is integrated into the staff database in order to relate with yearly staff performances. In the system, articles are categorized according to classification as International and National publications. Furthermore, both the International and National Categories are classified as a reputable and accredited publisher, respectively. The proposed system has tested by administrators in each unit and randomly staffs as respondents to fill the questioner. The result shows that the management system can be operated by an administrator in each unit and the staffs do not have difficulty to use the proposed system. It means the proposed system can be applied in The State Polytechnic of Malang.

1. Introduction

Three Pillars of Higher Education is one of the goals that must be achieved and carried out by every college in Indonesia. The essence of the Three Pillars of Higher Education consists of 3 points, namely: Education and Teaching, Research and Development, and Community Service. For this reason, the Three Pillars of Higher Education is the responsibility of all elements contained in college. Not only students, but lecturers, and the various academics involved [1].

In general, the developed countries in the world have very high research and development culture. Rapid technological developments, innovations, and even cutting-edge problem-solving products, are born out of research and development. Research and development are something this nation must always do if it wants to progress and develop [2]. Carrying out research and development will have an impact on the advancement of the economy, education, social and other sectors in society [3]. Lecturers as teaching staff are required to fulfil the Three Pillars of Higher Education. One of them is research and development whose output is in the form of journals or scientific papers.

Currently, State Polytechnic of Malang applies a policy of giving incentives to lecturers for journal publications they produced. This policy is given in order to meet the number of publications produced in accordance with the work contract between the director and the ministry. Furthermore, this policy is also related to the Three Pillars of Higher Education which must be fulfilled by lecturers. Incentives are considered as one of the essential factors to encourage workers to make significant efforts and work more efficiently. This is because the incentive and reward system direct workers' capabilities into more efficient in their work to achieve the institution's goals [4-5].

In practice, the submission of incentives for lecturers for the articles or journals they made is still not well accommodated. In this case, the accommodation means that no information system can store the data related to the incentive application. Lecturers who want to apply for incentives for articles or journals they made must submit data via google form without knowing whether the data has been processed or not by authorized staff, which then the data stored in the form of a Microsoft Excel file. This is time-consuming and inefficient in terms of data management. Based on that problem, in this research, the development and analysis of an information system for incentives publication of reputable indexed international journal and national journal (case study State Polytechnic of Malang) proposed.

This information system is about submission of incentives for article or journal publications that have been done by lecturers at the State Polytechnic of Malang. All data will be stored and managed properly with this system. Article or journal categories can be seen by the lecturer so that they can become a reference later. The number of incentives given depends on the article or journal category chosen by the lecturers. This system is expected to be able to help related units as well as lecturers who wish to propose incentives for the articles or journals that have been made.

2. The descriptions of system

This web-based information system is designed to make it easier for lecturers to submit the articles or journals they made. The submitted articles or journals are intended to get incentives, where the amount of incentives received depends on the article or journal category. The journal category consists of international journals and national journals. International journals are divided into reputable publishers such as Scopus and ISI Thomson Reuter and other publishers such as Copernicus, DOAJ, and CABI. Providing incentives is very important, the absence of appropriate incentives can have a negative impact on employee performance. It may also weaken their workplace productivity, which decreases in the chances of achieving promising institutional goals.

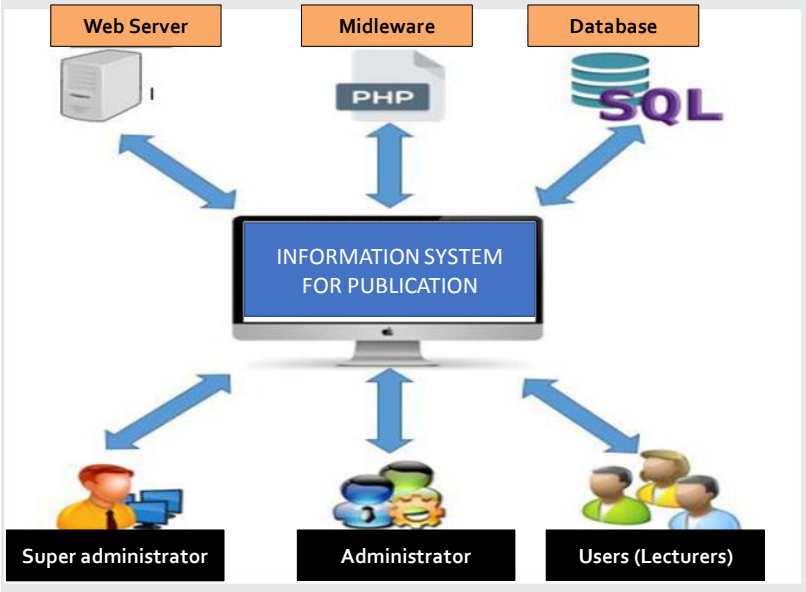

Figure 1. System architecture.

Figure 1 shows the system architecture of this system. This system has three access rights: admin, super admin, and user and managed by the related unit. In this system, the admin can see the articles entered by the lecturers and can also change the articles status starting from being processed until the process is complete. Thus, the related unit does not need to do this manually but has been systemized [6]. Super admin can see data from admin, user data (lecturers), and data from lecturers' articles uploaded. Lecturers, as users, can input article data to be submitted to get incentives into the system by entering article data and uploading article documents and can monitor the article submission process through the status given by the admin [7-8].

The incentive submission process starts with the user submitting their article or journal in the system, then selecting the journal category and then uploading all the data requested by the system. The data that has been uploaded by the user will be stored in the system database. Then the admin will verify the data that has been uploaded by the user. After completing the verification process, the admin will change the status of "submission" to "processed" or "accepted" if the data uploaded by the user meets the predetermined criteria. Users with accepted status can print the related data, which will later prove that the submission of article incentives has been verified and accepted by the related unit's admin.

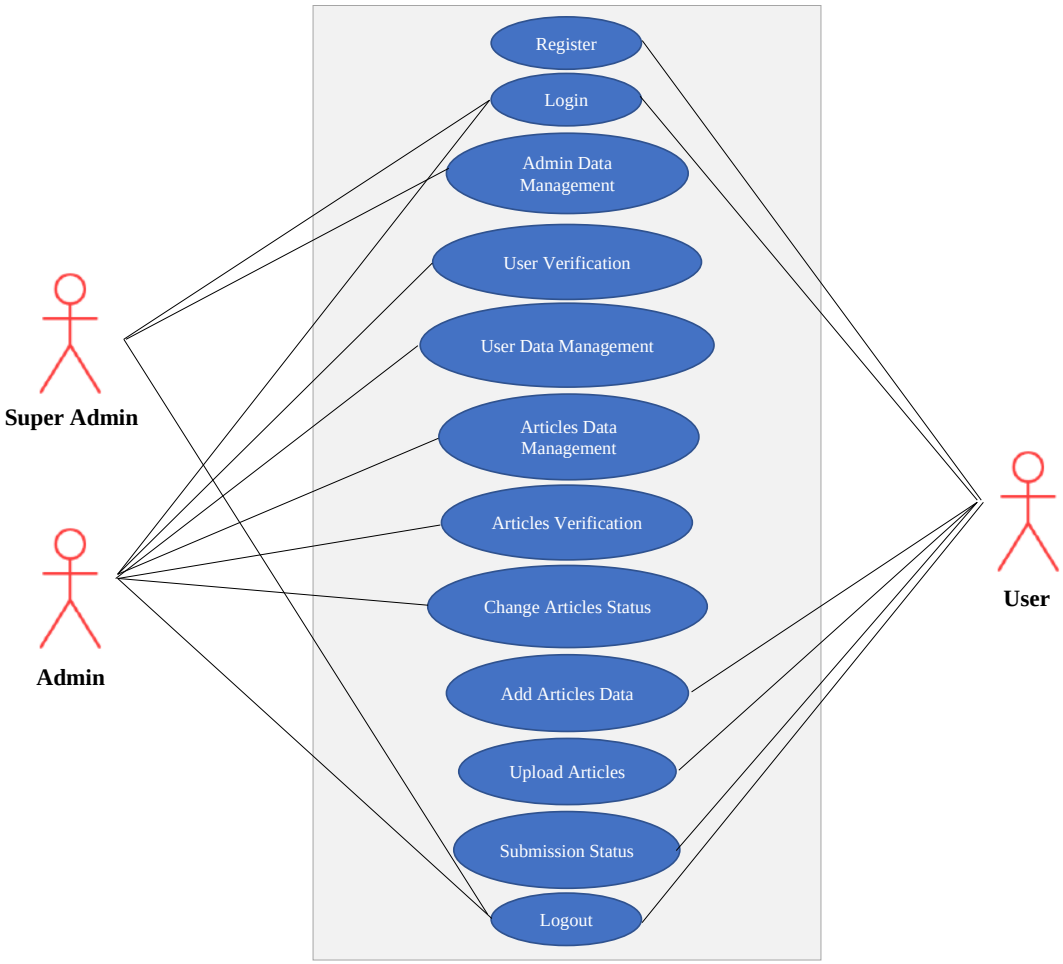

Figure 2. Use case diagram.

Figure 2 shows the use case diagram of this information system. Use case diagrams are UML diagram models used to describe the expected functional requirements of a system. Use case diagrams are used to briefly explain who uses the system and what they can do [9-10]. In this information systems for incentives publication of reputable indexed international journal and national journal, there are three actors including super admin, admin, and user.

3. Results and discussion

Testing is carried out on all system functionalities from the super admin, admin, and user pages. This is done to ensure all features of this system can run smoothly and are satisfactory for users [6]. The super admins have three features, such as login, admin data management, and logout. Meanwhile, admins have seven features, such as login, user verification, user data management, article data management, article verification, changing article status, and logout. Lastly, users (lecturers) have six features: register, login, add article data, upload articles, view submission status, and logout. All system features have been tested and can works properly as shown in Table 1 below.

Table 1. Functional test results.

Actors	Number of Features	Status
Super Admin	3	Works Properly
Admin	7	Works Properly
Users (Lecturers)	6	Works Properly
Main Page Login/Logout		**Status**
Login Super Admins, Admins and users		Works Properly
Logout Super Admins, Admins and users		Works Properly
Register Page		**Status**
Users (Lecturers) Register		Works Properly

For the purpose of this study, user satisfaction testing on this system is also carried out by using a questionnaire distributed to the admin and the lecturers. A total of 55 respondents filled out the distributed questionnaires consisting of 9 respondents as super admins, 13 respondents as admins from 7 departments and 1 unit, and also 33 users (lecturers). From a total of 9 respondents as super admins, 8 respondents stated that this system is excellent, and one is good. Meanwhile, a total of 13 respondents as admins, 10 respondents stated that this system is excellent, and 3 are good. Lastly, 28 out of 33 users (lecturers) stated that this system excellent, 4 good, and 1 fair, respectively. The questionnaire results can be seen as shown in Figure 3 below.

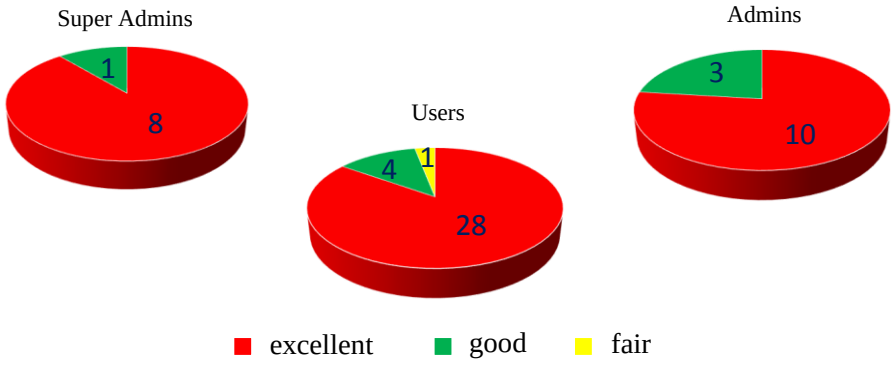

Figure 3. Questionnaire results.

Figure 4 shows the user view of this system. On this page, the user can download two files, a personal data form, and a scientific publication statement letter, which must be filled in. After that, it is uploaded back into the system when filling in new article data. Article uploading can be done on the article upload page, where on this page, the user is required to fill in all available fields. The fields in the topic include the name of the article, the name of the journal, criterion 1 (international or national journal), criterion

2 (the type of publisher), URL of SINTA, URL of Scopus, URL of articles, contributions, indexing agencies, upload article file, upload personal data, and upload a scientific publication statement letter. After all fields are filled in, user can submit the data to store the data in the system database. The process of articles that have been submitted can be monitored by looking at the status of the article on the system.

Figure 5 shows the user responds of the system performances. The system tested by 50 lecturers as respondents. Most of performance categories have good responds except the difficulties. It is occurred by the old lecturers have difficulties to operate the systems by themselves. The proposed of information system development is realize the effectiveness data transactions. On the other hand, the information technology needs the capability in order to operate as their requirements [8].

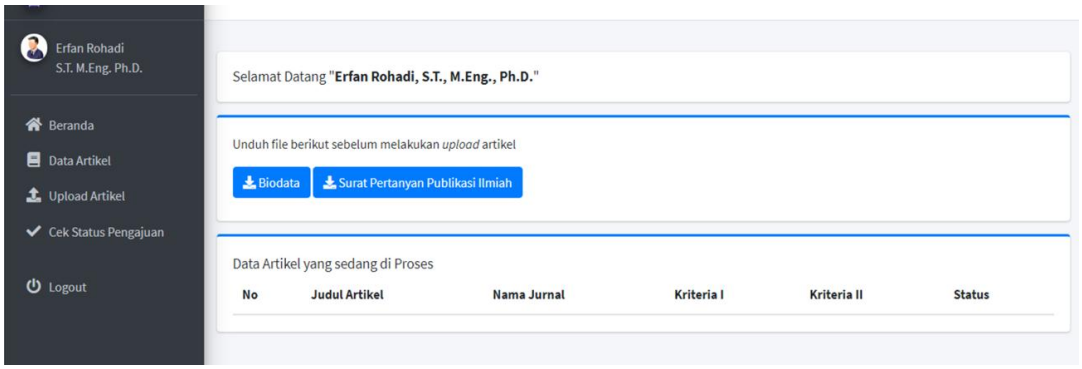

Figure 4. User view.

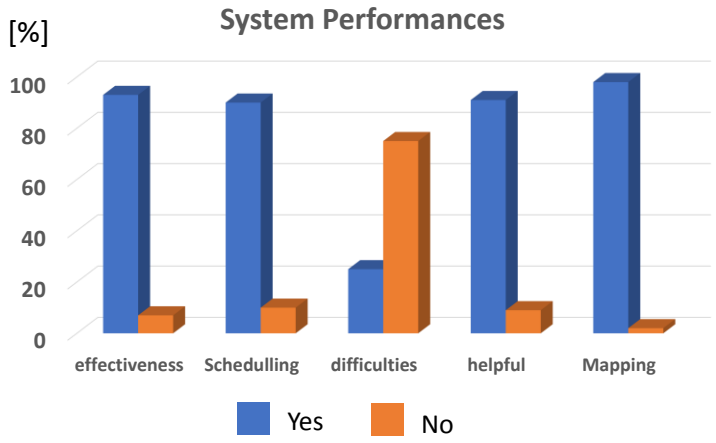

Figure 5. Respond of the users.

4. Conclusion

The development and analysis of an information systems for incentives publication of reputable indexed international journal and national journal (case study State Polytechnic of Malang) has been presented. The proposed system has been tested by admins in each unit and randomly staffs as respondents to fill the questionnaire. The results show that an administrator can operate the system in each unit, and the staffs do not have difficulty using the proposed system. As a result, the proposed system can be applied in The State Polytechnic of Malang.

Acknowledgment

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