SJIAS

Societas: Jurnal Ilmu Administrasi dan Sosial
Vol. 14 No 1 April 2025, Hal 26-31
P_ ISSN: 2252-603X, e_ISSN: 2354-7693
http://ejournal.unmus.ac.id/index.php/societa

Redesign and Calculation of Storage Shelves to Overcome the Accumulation of Diploma and Transcript Documents at Padjadjaran University

Oleh:

[1] Natabita Ayum Adiyuna; [2] Nurillah Jamil Achmawati Novel

[12]. Business Logistics, Faculty social and political science, Padjadjaran University

Abstract

The management of academic documents, such as diplomas and transcripts, is an important part of university administration. At Universitas Padjadjaran, there has been a backlog of documents due to graduates not collecting their physical certificates, especially since the introduction of digital certificates. This research aims to redesign the document storage system at the university's integrated service unit to address the backlog. Through a qualitative approach, data was collected from observations and interviews. Fishbone analysis was used to identify the root causes of document backlog, such as transportation costs, distance, and the convenience of using digital certificates. Physical measurements showed that one meter of storage rack can hold 250 documents. A roll o'pack rack with 6 shafts, each with a capacity of 3000 documents, was proposed as a solution to store documents efficiently. With the number of documents yet to be retrieved reaching 7018 diplomas and 7864 transcripts, five roll o'pack racks are needed to accommodate all documents. The results of this research are expected to help the university in improving storage efficiency and administrative services for its graduates.

Keywords: Storage Efficiency, Document Storage System, Academic Document Management

PENDAHULUAN

Public service, according to Law Number 25 of 2009, is a series of activities aimed at meeting the service needs of the general public (Republic of Indonesia, 2009a). One type of public service regulated by the Minister of Administrative Reform Decree No. 63/KEP/M.PAN/7/2003 is administrative services. In administrative services, there are several standards that must be met, such as being centralized, integrated, having task forces, as well as other developments in accordance with applicable guidelines. Administrative services encompass activities such as record keeping, research, decision-making, documentation, and various other clerical tasks that produce documents, such as certificates, permits, recommendations, and other letters (Dewi & Wilantika, 2022).

The management of academic documents, especially diplomas, is a crucial aspect of university administration. Diplomas are authentic proof that demonstrate a graduate's academic achievements and are often a key requirement for continuing education or entering the workforce. Universitas Padjadjaran, as a state university in Indonesia, provides both physical and digital diploma documents for its graduates. The availability of digital diplomas makes it easier for graduates who need diplomas for job applications or further education without having to come to campus. However, this convenience has led to many graduates being reluctant to collect their physical diplomas, resulting in the accumulation of diplomas in Universitas Padjadjaran's diploma document storage facility. Based on data obtained from observations at the integrated service unit of Universitas Padjadjaran, as of May 9, 2023, there were 7,018 diplomas and 7,864 academic transcripts from 2018 to 2023 that had not been collected by graduates. This has led to a buildup of diplomas and

transcripts in the ULT Universitas Padjadjaran, which serves as the center for distribution and storage of diplomas for students from various faculties at the university.

This situation has caused the storage space to become overcrowded, making it difficult to organize documents and increasing the risk of damage due to humidity and dust. In this context, planning and calculating the storage rack requirements for diploma documents becomes crucial. Accurate calculations will help the university design an efficient, organized, and easily accessible storage system. This will not only improve the tidiness and efficiency of the storage space but also speed up the process of locating and retrieving diplomas, thereby enhancing the quality of administrative services for graduates.

This study aims to calculate the storage rack requirements for diploma documents at Universitas Padjadjaran based on the data of accumulated diplomas. By analyzing this data, the study seeks to propose appropriate solutions to address the accumulation issue and improve the efficiency of storage and administrative services. The study will also provide recommendations on the optimal design and capacity of storage racks to meet long-term storage needs.

RESEARCH METHOD

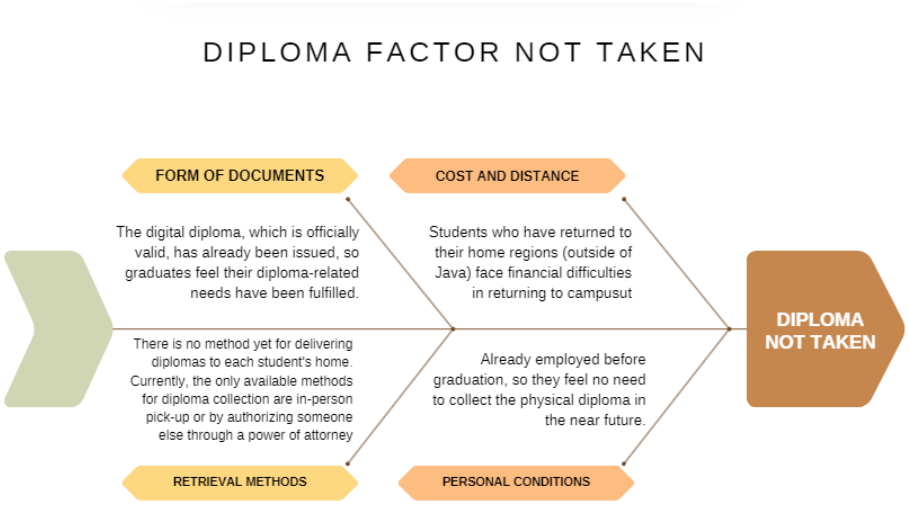
This study employs a qualitative method to analyze the storage rack requirements for diploma documents at Universitas Padjadjaran. A qualitative approach was chosen to holistically and descriptively understand the phenomenon, focusing on the experiences and perspectives of research subjects within a specific context (Waruwu, 2023). Data analysis is conducted qualitatively using thematic analysis techniques. The researcher will identify, categorize, and interpret the collected data to uncover patterns and themes related to the diploma storage needs (Kristanto & Padmi, 2020). The objective of this research is to provide an overview of diploma document management and to determine the optimal storage rack requirements. The population in this study comprises diploma documents and academic transcripts from graduates between 2018 and 2023, totaling 7,018 diploma

RESULTS AND DISCUSION

Identifying the Causes of Diploma Document Accumulation

Based on the results of observations and data collection, the author maps the causes of the accumulation of diploma documents in the integrated service unit. Cause and effect diagrams, or often called fishbone diagrams, can help to identify possible causes of a problem and organize ideas into various relevant categories (Coccia, 2020). The fishbone diagram bridges the gap between the organization and the most influential causes so that it can provide a perfect understanding of the problem and help in studying each cause of the problem (Salma Hakim dkk., 2023) Through fishbone analysis, several causes of the accumulation of diplomas were found, including the following

SJIAS
Societas: Jurnal Ilmu Administrasi dan Sosial
Vol. 14 No 1 April 2025, Hal 26-31
P_ ISSN: 2252-603X, e_ISSN: 2354-7693
http://ejournal.unmus.ac.id/index.php/societa



a) Cost and Distance

One of the main factors that cause diplomas not to be collected is cost and distance. Graduates who have returned to their hometowns, especially those outside Java Island, face the cost of returning to campus. High travel costs are an obstacle for them to collect their diplomas in person.

b) Personal Conditions

Personal circumstances also play a role in delaying the collection of diplomas. Many graduates have found jobs before graduating, so they feel no need to immediately take a physical certificate. In addition, some graduates feel that with the existence of a legal form of digital diploma, their diploma-related needs have been met and there is no need to rush to take the physical version.

c) Retrieval Methods

The available methods of certificate collection also affect how quickly graduates collect their certificates. Currently, the collection method is only done in person on campus, which reduces flexibility for graduates who live far from the campus or who are outside Java Island. This limitation causes delays in certificate collection.

d) Form of Document

The existence of a legally recognized digital certificate form is also a factor that makes graduates not immediately take a physical certificate. Graduates feel that their needs have been met with this digital form, so they are in no hurry to take a physical certificate from the campus.

The number of diplomas stored is directly proportional to the graduates and graduation waves produced by Padjadjaran University. In 1 year, Padjadjaran University held 4 graduation waves, these conditions increased the number of documents stored by the integrated service unit. Based on historical data as of May 9, 2023 since 2018-2023 there are 7018 diplomas and 7864 transcripts that have not been taken by graduates with the following details

Determining the Average Thickness of Diploma and Transcript Documents

To determine estimation the thickness of diploma and transcript documents, measurements were taken from a stack of 50 diploma and transcript documents, totaling 20

cm in thickness. The measurement was carried out by stacking 50 diploma and transcript documents and then measuring the total thickness using a ruler. To calculate the average thickness of the documents, the following calculation method was used:

$$\text{Average document thickness of diplomas} = \frac{\sum \text{Document thickness of diplomas}}{\sum \text{Diplomas documents sample}}$$

$$\frac{20\ \text{CM}}{50\ \text{documents}}$$

$$0{,}4\ \text{cm}$$

$$\text{Average document thickness of transcripts} = \frac{\sum \text{Document thickness of transcripts}}{\sum \text{Grade transcripts sample}}$$

$$\frac{20\ \text{CM}}{50\ \text{documents}}$$

$$0{,}4\ \text{cm}$$

Based on these calculations, it was determined that estimation the thickness of each diploma and transcript document is 0.4 cm. After determining the average thickness of the diploma and transcript documents, the next step is to calculate how many documents can be stored in 1 meter with the following calculation:

$$\sum \text{Diploma documents in 1 meter} = \frac{1\ \text{meter}}{\text{Average diploma document thickness}}$$

$$\frac{100\ \text{cm}}{0{,}4\ \text{cm}}$$

$$250\ \text{document}$$

$$\sum \text{Grade transcript documents in 1 meter} = \frac{1\ \text{meter}}{\text{Average transcript document thickness}}$$

$$\frac{100\ \text{cm}}{0{,}4\ \text{cm}}$$

$$250\ \text{document}$$

SJIAS
Societas: Jurnal Ilmu Administrasi dan Sosial
Vol. 14 No 1 April 2025, Hal 26-31
P_ ISSN: 2252-603X, e_ISSN: 2354-7693
http://ejournal.unmus.ac.id/index.php/societa

Based on the above calculation, it was found that within the range of a 1-meter document storage shelf at the integrated service unit of Universitas Padjadjaran, 250 diploma documents and 250 transcript documents can be stored

Proposed Size and Capacity of the Document Storage Rack for Diplomas and Transcripts

In an effort to address the accumulation of diploma and transcript documents, the author selected a roll o'pack rack as an estimated solution for use. The roll o'pack rack is divided into 3 sections: a static single cabinet, a dynamic double cabinet, and a dynamic single cabinet. Each dynamic cabinet can be combined with each other and can be centrally locked on the dynamic single cabinet, ensuring document security (Rahmatika, 2023). The roll o'pack rack used consists of 6 shafts with a length of 200 cm, width of 40 cm, and height of 180 cm. Based on the formulated dimensions of the diploma and transcript documents, the roll o'pack rack consisting of 6 shafts with a length of 200 cm, width of 40 cm, and height of 180 cm can store the following number of documents :

$$\text{Capacity of document storage} = \frac{\text{Length of storage rack}}{\text{Average document thickness}}$$

$$\frac{200 \text{ cm}}{0{,}4 \text{ cm}}$$

500 documents

If one rack consists of 6 shafts, the maximum storage capacity of the rack becomes 500 documents x 6 shafts. Thus, the rack can hold 3,000 documents.

Document Storage Rack Requirements

The storage requirement is based on the number of documents to be stored. The documents to be stored consist of diplomas and transcripts that have not been collected (excluding the latest diploma and transcript documents from the period after 2023). According to the data, there is a total of 7,018 diplomas and 7,864 transcripts that have not been collected. Therefore, the storage requirement calculation is as follows:

$$\text{Rack requirements} = \frac{\text{Total number of Documents stored}}{\text{Rack capacity}}$$

$$\frac{14{,}882 \text{ documents}}{3000 \text{ documents}}$$

5 Rack

Thus, to store the total number of diplomas and transcripts, 5 roll o'pack racks are required.

CONCLUSION

This study identifies the issue of document accumulation of diplomas and transcripts at Universitas Padjadjaran, caused by various factors such as the cost and distance of document collection, personal circumstances of the graduates, and the existence of digital diplomas. This accumulation of documents has led to limited storage space and an increased risk of document damage. Through an analysis of storage space needs and measurement of document thickness, it was found that the optimal storage solution to address this accumulation is the roll o'pack rack, which can store up to 3,000 documents per unit. With the number of uncollected documents reaching 7,018 diplomas and 7,864 transcripts, five units of roll o'pack racks are required to store all the documents. The implementation of this solution is expected to improve storage efficiency, ensure document security, and resolve the issue of document accumulation,

REFERENCES:

Coccia, M. (2020). Fishbone diagram for technological analysis and foresight. *International Journal of Foresight and Innovation Policy*, *14*(2/3/4), 225. https://doi.org/10.1504/IJFIP.2020.111221

Dewi, N. K. A. K., & Wilantika, N. (2022). Pengembangan Sistem Informasi Layanan Dokumen Alumni Politeknik Statistika STIS. *Jurnal Teknologi Informasi dan Ilmu Komputer*, *9*(2), 255–362. https://doi.org/10.25126/jtiik.2021864776

Kristanto, Y. D., & Padmi, R. S. (2020). *Analisis Data Kualitatif: Penerapan Analisis Jejaring untuk Analisis Tematik yang Cepat, Transparan, dan Teliti*. https://doi.org/10.35542/osf.io/csah6

Rahmatika, N. (2023). Analisis Kebutuhan Rak File Dokumen Rekam Medis di Rumah Sakit Sentra Medika Cibinong. *COMSERVA : Jurnal Penelitian Dan Pengabdian Masyarakat*, *2*(10), Article 10. https://doi.org/10.59141/comserva.v2i10.606

Salma Hakim, N. T., Barlian, B., & Lestari, S. P. (2023). Quality Control Using Fishbone Analysis Method to Improve Product Quality in Dya Bordir Tasikmalaya. *Jurnal Ekonomi, Manajemen, Akuntansi dan Keuangan*, *4*(2). https://doi.org/10.53697/emak.v4i2.1182

Waruwu, M. (2023). Pendekatan Penelitian Pendidikan: Metode Penelitian Kualitatif, Metode Penelitian Kuantitatif dan Metode Penelitian Kombinasi (Mixed Method). *Jurnal Pendidikan Tambusai*, *7*(1), 2896–2910. https:// doi.org/10. 31004/jptam.v7i1.6187