

Information Technology-Based Library Management in Higher Education

Muhammadun¹, Abdul Karim², Oman Fathurohman³, Amin Haedari⁴,
Dian Widiantari⁵ and Juned⁶

¹*Islamic Criminal Law, Faculty of Law, Institut Agama Islam Bunga Bangsa Cirebon, Jl. Widarasari III Tuparev Cirebon, Indonesia*

²*Educational Management, Faculty of Teacher Training and Education, Universitas Muhammadiyah Cirebon, Jl. Tuparev No. 70 Kedawung, Cirebon, Indonesia*

³*Postgraduate of Islamic Education Management, Institut Agama Islam Bunga Bangsa Cirebon, Jl. Widarasari III Tuparev Cirebon, Indonesia*

^{4,5}*Islamic Education Management, Institut Agama Islam Bunga Bangsa Cirebon, Jl. Widarasari III Tuparev Cirebon, Indonesia*

⁶*Library Management, STKIP Muhammadiyah Kuningan, Jl. Murtasiah Soepomo No.28 b Kuningan, Indonesia*

¹*muhammadun@bungabangsacirebon.ac.id, ²abdul.karim@umc.ac.id,*

³*omanfathurohman2@gmail.com, ⁴aminhaedari@bungabangsacirebon.ac.id,*

⁵*dianwidiantari@bungabangsacirebon.ac.id, ⁶juned@upmk.ac.id*

Abstract

Digital-based libraries have become necessary; consequently, all library service officers should master information and communication technology. However, not all, primarily higher education, can organize information technology-based libraries properly. It then causes the quality of education to be still far behind. The library's position in higher education is the primary key to developing civilization. For this reason, this study aims to determine IT-based library management in Islamic higher education. The method used was qualitative with a case study approach since this research examined digital-based library management implemented in higher education. Meanwhile, the research instruments employed comprised interviews, observations, and documentation. The collected data were then analyzed through data reduction, data display, and verification, and then the data validation stage utilized technical triangulation. This research was conducted at STKIP Muhammadiyah Kuningan, which implemented a digital library in higher education. The study results revealed that digital-based library management was carried out through 1) digital library operational planning by preparing good human resources and infrastructure. 2) The organization in the library was quite well structured according to the main tasks and functions of each. 3) The actuating in the library management started with human resources, book collections, and facilities and infrastructure. In addition, 4) controlling the time and cost of IT-based library management was exceptionally well organized. Based on the study results, it can be concluded that digital libraries in higher education could be implemented with modern integrated management. The findings imply that the STKIP Muhammadiyah

Article history:

Received (September 12, 2022), Review Result (October 15, 2022), Accepted (December 1, 2022)

Kuningan library could use digital-based library management, starting from planning, organizing, implementing, and supervising library management, which is expected to improve the quality of human resources and library management.

Keywords: *Library management, Information technology, Higher education, Library Services, Library human resources*

1. Introduction

In the millennial era, where modern society is known as the information society or the current 4.0 era, what is "global" and takes place with very high opportunities is the developments and various breakthroughs in the field of information technology. Specifically, the library's application and development of information technology is principally a manifestation of various interests. These interests encourage libraries to modernize services and apply information technology in their daily activities.

In addition, the impact of verbal exchange of information often leads to different interpretations because the delivery is usually challenging to match the original. The discrepancy with the source of information can be caused by the addition of information provided by the information provider, who is also the previous information recipient [1].

Furthermore, in order not to be out of date with their increasingly complex tasks, libraries must inevitably increase their roles. Regarding structural and operational regulations, libraries, especially in higher education, need more specific management according to their needs levels. However, in actual conditions, not all higher education can organize libraries properly and adequately, especially in implementing information technology-based libraries. It then causes the quality of Indonesian education to be still far behind in service, processing, tracing, and utilization, which is still not optimal for users in the higher education environment [2].

Departing from the urgency and problems above, the researchers chose one of the higher education libraries in Kuningan Regency, one of which has implemented such a system, i.e., the library at the College of Teacher Training and Education (STKIP) Muhammadiyah Kuningan. Presently, the STKIP Muhammadiyah Kuningan library has been accredited by the National Library of Indonesia. The library management has also migrated data from conventional to automation in a gradual way. Besides, the STKIP Muhammadiyah Kuningan library is part of the Indonesian higher education library forums, better known as FPPTI.

Moreover, several previous research results are relevant to this research. Miliani (2015) revealed that most library leadership elements understood total quality management but did not comprehend the concept as a whole [3][4][5][6]. Its relevance in this research is with the management of higher education libraries. In his research, Suwarji (2015) stated that library planning had fulfilled procedures, requirements, and legal certainty. The organization has also met the national standards for junior high school libraries, but there were still shortcomings. The supervision was then adjusted to the standards of civil servants. In addition, Kartika (2015) examined library management according to George R. Terry's opinion, including library controlling planning, service implementation in the form of making quality procedures and work instructions, and supervising library services through internal and external evaluations. In his research, Kurniawan (2016) also showed that the digital library management process has effectively planned funding and budgeting, digital collection management, facility management, and controlling and evaluation. Nevertheless, the digital library management process has not been effective in the management of human resources.

From the studies, there are several trends, i.e., TQM research using the Deming method and research in schools more towards specific services, leading to quality education and digital collection processing. Therefore, this study differs from the previous studies' results since it tends to IT-based library management in Islamic higher education.

As a result of observations made at STKIP Muhammadiyah Kuningan, it was revealed that the need for digital-based libraries had arisen. All library service personnel should thus be proficient in information and communication technologies. However, not all higher education can efficiently manage libraries that use information technology. Even while the library's role in higher education is the primary key to advancing civilization, education quality is far behind.

In this study, the researchers focus on information and technology-based library management, starting from planning, organizing, actuating, and controlling. Based on the problem background and the research focus, the research problem formulation is as follows: How is information technology-based library management in Islamic higher education?

2. Literature Review

Management is the science and art of utilizing human resources and other resources effectively and efficiently to achieve a specific goal. Management is also a science and art to make others willing to work to achieve the goals formulated together. Therefore, management requires a basic concept of knowledge, the ability to analyze situations, conditions, and existing human resources and think of the right way to carry out interrelated activities to achieve goals (Windasari, 2012). In essence, human activities, in general, are managing; to manage here, art is needed, i.e., how others need work to achieve a common goal.

The term digital library first appeared in July 1945 when Vannevar Bush felt that the manual printing model hampered access to published information. This idea was embodied in his paper entitled "As We May Think" (Johnson & Magusin, 2005; Saleh, 2010b; Testiani, 2015). In 1945, Dr. Bush created a device he called "memex," a microfilm-based mechanized system used to store, search, and display human knowledge. Licklider further advanced this idea and began designing computer-based libraries. According to content or collection-oriented experts, digital libraries contain information or collections arranged in digital format. This digital collection service is also served digitally using electronic devices, communication, and information technology. However, according to some experts, this digital collection could be the entire library collection in digital form or a part where the collection is a complement and alternative to the printed collection in the library. Related to this digital collection, other experts focus more on collections of multimedia data in vast quantities arranged in such a way using a standardized management system (Retno and Mardianto, 2019). Based on this theory, digital library management utilizes digital-based information technology media in cataloging, circulation, and management.

2.1. Library management

Libraries are part of a well-managed organization. Therefore, to realize the library's vision and mission, it is necessary to have good library management. If the management is good, all units in the library will progress and run optimally. Moreover, if the library is located in an educational institution, the library must undoubtedly make the educational institution successful by providing collections or information in the learning process [7].

For this reason, the development of library management as an information center is essential since good development of library management will support the learning process.

Besides, management development in the library has a reference: planning, organizing, actuating, and controlling (POAC). The application of the POAC reference certainly does not want a library to be stagnant in the development of library management but to be developed instead [8].

Library management can also be interpreted as an effort by a library organization to achieve the goals stated in the vision and mission through a process carried out together or in groups. Hence, each library should consider several factors in a managerial system: planning, production goods, place, price, promotion, and peace [9].

2.2. IT-based higher education library management

Higher education libraries can provide optimal service to users if there is the management of everything within. No activity can run, be created, be implemented, or be achieved if it does not have a sound management system.

On the other hand, talking about technology cannot be separated from popular technology, called IT (information technology). With information technology, data can be managed easily, quickly, and accurately due to computers' sophistication. With specific applications (information systems), the data can also become helpful information and even knowledge for various interested parties (stakeholders) [10]. In this regard, an information system is an integrated human/machine system that provides information to support operations, management, and decision-making functions within an organization. In addition to the ability to access electronic data and information, computer technology is also a unit of hardware and software, which can be utilized as a tool to compile a database system with the ability to enter, compile, display, edit, sort, process, and perform a series of analyses [11].

However, storing documents on a website to provide information to users is not as simple as one might think. Therefore, there is IT-based library management help manage it to be utilized later by librarians and users. Also, to make it happen, librarians should have several competencies. Among them are (a) having education and skills in librarianship. The librarian profession must be pursued with education because education is one of the efforts to develop human resources. (b) Librarians should have skills in using information technology. The ability to use information technology also demands that a librarian always balance his knowledge since information technology is an information literacy package that a librarian must master. (c) Librarians should have language skills. Language and communication skills also need to be possessed by librarians because they support library processing and improve service quality. Besides, (d) librarians should know the users' needs. With librarians knowing the users' needs, a good service process will be realized. It is because the information services needed by users will be automatic.

Further, the knowledge of media must also be owned by librarians to support improving services to users. A librarian must always be up to date in following the available information, especially in library science. It can be done by frequently attending seminars, workshops, and training. Seminars or conferences are media for sharing knowledge about library management. It will make librarians and users more well-developed to contribute more to their institutions [12]. With the competencies possessed by the librarian, the library in an institution will become more advanced.

From the literature review above, the authors assume that library management is a sub-management of education and management. Therefore, this library service begins with the adequacy of library collections and the use of information technology to answer the users' needs. Besides, these two terms, computer technology, seem to go hand in hand, like two

sides of a coin [13]. Thus, the collaboration between libraries and information technology will help the performance of librarians and library users.

The following is a framework of assumptions in this study:

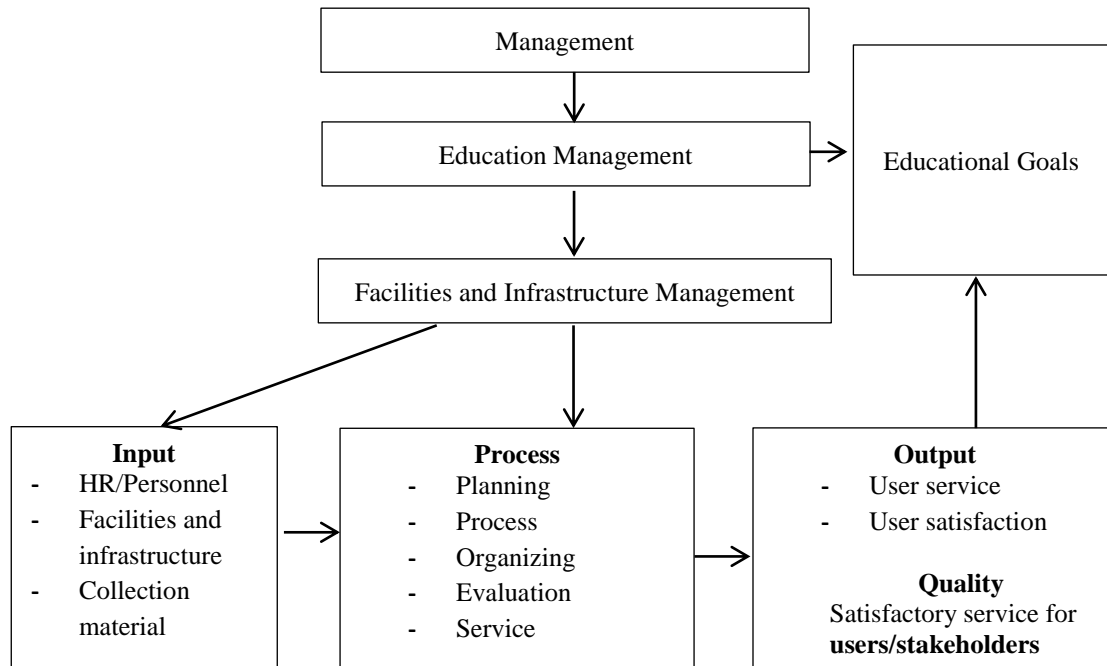


Figure 1. Research assumptions

3. Research Method

This study aims to describe how planning, organizing, actuating, and controlling the management of higher education libraries were based on technology and information.

This study used a qualitative approach. The qualitative research approach can be interpreted as research based on positivism/interactive philosophy, used to examine the condition of natural objects (as opposed to experiments), where the researcher is the key instrument; data collection techniques are carried out by triangulation (combined); data analysis is inductive/qualitative; qualitative research results emphasize the meaning of generalizations [14].

The method employed in this study was the case study, a method used to find out phenomena or symptoms that occur within a specific time. This method was utilized to find out, analyze, and describe what happened from the planning, organizing, actuating, and controlling carried out by the STKIP Muhammadiyah Kuningan library.

In this study, the data source was through purposive sampling, so the data obtained were in the form of (1) primary data obtained directly through interviews and observations [14]. In this study, the primary data came from informants. The selected informants comprised the head of the library, staff, and students who often borrowed books or used library facilities at STKIP Muhammadiyah Kuningan. (2) This study's secondary data were obtained indirectly from literature and various other sources of information, such as books, journals, and research papers related to technology and information-based library management [14].

The research instrument utilized in this study was a participatory observation, in-depth interviews, and documentation for the same data simultaneously [14]. Participatory observation is a data collection method used to collect research data through observation and sensing, where the observer or researcher is involved in the daily life of the respondent. In this study, the researchers also used direct, in-depth interviews with informants since the researchers wanted to know thoroughly how information technology-based library management was at the STKIP Muhammadiyah Kuningan library. Meanwhile, documentation is a record of events that have passed, which can be in the form of writing, pictures, or monumental works of someone [14]; it can also be in the form of photos, sound recordings, and other notes that support and relate to research.

In principle, research is to measure social or natural phenomena. Since research is principally to take measurements, an excellent measuring instrument must be used. In this study, the method used was qualitative research, so the research instrument or tool was the researcher himself [14]. In this study, the primary instrument was the researcher, plus supporting instruments from library managers, lecturers, and students. Moreover, in qualitative research, everything sought from the research object is not clear and definite, whether the problem, the data source, and the expected results. The research design is also still unclear, is still temporary, and will develop after the researchers enter the research object; thus, the researcher is the key instrument in qualitative research.

After collecting data, the researchers processed all the data collected. Finally, the data were analyzed using a qualitative descriptive method by thoroughly describing the data obtained during the research process [14]. The analysis used was analysis before in the field and analysis while in the field. Meanwhile, qualitative data analysis consisted of three activities simultaneously: data reduction, data presentation, and conclusion drawing/verification [15]. These stages - data reduction, data presentation, and conclusion drawing/verification - as inter-relationships before, during, and after data collection in parallel form develop a common domain called analysis [14].

The technique used to check the data validity was the source and method triangulation. Triangulation of sources means comparing and checking the degree of trustworthiness of information obtained through different times and tools in qualitative research. It can be achieved in several ways, including (1) comparing observational and interview data and (2) comparing interview results with the contents of a related document. In triangulation with the method, there are two strategies: (1) checking the degree of confidence in the findings of several data collection techniques and (2) checking the degree of confidence of several data sources with the same method.

4. Results

4.1. Information technology (IT)-based library planning in STKIP Muhammadiyah Kuningan

The results of this study are described in detail as follows:

The planning carried out in the information technology-based library at STKIP Muhammadiyah Kuningan encompassed various aspects prepared by the library, including human resources, facilities and infrastructure, budget, cooperation, adequate lighting, and air circulation, preparation of vision and mission, and development of work program, described as below:

There were five human resources in the STKIP Muhammadiyah library, and within, some were graduates with Bachelor's degrees in the library. Some were not graduates with Bachelor's degree in library or Bachelor's degree in education only: three people were Bachelor's degree in library, and two were Bachelor's degree in education.

The interview results with the chairman of STKIP Muhammadiyah Kuningan stated that:

"The planning for the IT-based library at the STKIP Muhammadiyah Kuningan includes preparing human resources, facilities, and infrastructure. Although not yet fully fulfilled, we are doing it all gradually. We hope that the STKIP Muhammadiyah Kuningan library will continue to grow and fulfill our expectations in the future. In selecting human resources, the campus has also tried to select them strictly, not randomly recruiting staff or library staff at STKIP Muhammadiyah Kuningan." (WW.K.STKIPMK)]

The STKIP Muhammadiyah library currently has one head of the library, two librarians, and two staff members, with five people. Of these five people, three graduated with a Bachelor's degree in library, and two others with a Bachelor's degree in education.

The following are the interview results with the head of the STKIP Muhammadiyah Kuningan library:

"There are five human resources in the STKIP Muhammadiyah library; some are library graduates, and some are not library undergraduates or only education graduates. However, it does not pose a problem in practice because a Bachelor's degree in library graduates can guide non-library graduates. Although administratively, Bachelor graduates who are not library graduates are not said to be librarians. However, in terms of performance, they can also adjust." (W.W.K.STKIPMK)]

In addition, the facilities and infrastructure at the STKIP Muhammadiyah Kuningan library included a library building of 135m², a collection of 7,243 titles and 17,565 copies, 16 bookshelves, two TVs, six computers, and internet facilities.

It was stated by the head of the STKIP Muhammadiyah Kuningan library that:

"The planning stage for developing an information technology-based library includes making short, medium, and long-term library programs, where plans and strategies are set out to develop an information technology-based library in the STKIP Muhammadiyah Kuningan. In addition, it is also strengthened by the existence of quality human resources and adequate infrastructure." (W.W.KP.STKIPMK)

The interview results with the head of the library also revealed that:

"To improve the competence of librarians and staff, the library involves them in activities, such as workshops, seminars, and other training. These activities start at the internal, regency, provincial and national levels. It can be seen from the training data held by the library." (W.W.KP.STKIPMK)

Moreover, the results of these interviews indicate that the library was very supportive of activities to improve the competence of librarians.

The following is a list of sustainable competencies that the STKIP Muhammadiyah Kuningan library has carried out for the head of the library and the librarian:

Table 1. List of sustainable librarian professional improvement programs

No.	Sustainable Competency Improvement	Place	Year
1.	Archival technical guidance and library management	Kopertis IV – Bandung	2017
2.	Muhammadiyah Higher Education Library Forum Workshop – Aisyiyah (FPPTMA)	Univ. Muhammadiyah Jakarta	2017
3.	National seminar “the role of libraries in the development of information literacy and scientific communication.”	STIE Ekuitas – Bandung	2017
4.	Workshop "public speaking to improve the competence of librarians."	Univ. Muhammadiyah Sukabumi	2018
5.	Workshop "knowledge management in the library."	Univ. Singaperbangsa – Karawang	2018
6.	National Seminar on Muhammadiyah College Library Forum – Aisyiyah (FPPTMA)	Univ. Muhammadiyah Sukabumi	2018
7.	FPPTMA Workshop “Training of Information Literacy Trainers”	Univ. Muhammadiyah Tasikmalaya	2019
8.	Library Management Training of Trainer	Office of Archives and Libraries Kuningan, West Java	2020
9.	Technical guidance for higher education library managers	Office of Archives and Libraries Kuningan, West Java	2020
10.	National seminar "the role of libraries in educating the nation and enlightening the universe."	Univ. Muhammadiyah Lampung	2020
11.	National seminar “the role of libraries in the development of information literacy and scientific communication.”	STIE Ekuitas – Bandung	2017
12.	Workshop "public speaking to improve the competence of librarians."	Univ. Muhammadiyah Sukabumi	2018
13.	Workshop "knowledge management in the library."	Univ. Singaperbangsa – Karawang	2018
14.	Basic Library Management Training-Based on the School Literacy Movement	SMK Negeri 3 Kuningan	2018

In addition, several librarians at STKIP Muhammadiyah Kuningan also participated in other professional organizations in the library sector. Here is the list:

Table 2. Recapitulation of professional member librarians

No.	Librarian's Type of Profession	Librarian	Description
1.	Indonesian Higher Education Library Forum (FPPTI) West Java Region	Ade Tarmidi, SIP. Lis Maria, S.i.Pust	Member
2.	Muhammadiyah College Library Forum – Aisyiyah (FPPTMA)	Ade Tarmidi, SIP. Lis Maria, S.i.Pust	Member
3.	Muhammadiyah College Library Forum – Aisyiyah (FPPTMA) West Java Region	Ade Tarmidi, SIP.	Administrator
4.	Association of Indonesian School Librarians in Kuningan Regency	Lis Maria, S.I.Pust	Administrator

On the other hand, the budget is the main thing for library operations. STKIP Muhammadiyah Kuningan library budget came from its institution, the Muhammadiyah association, government agencies, and other parties.

Moreover, collaboration needs to be carried out by the STKIP Muhammadiyah Kuningan library because, with the collaboration, they can exchange ideas or share in solving problems or establishing other collaborations. Therefore, the collaboration carried out by the library included collaboration with government agencies and other related parties.

Lighting and air circulation are also essential in organizing the STKIP Muhammadiyah library. It affects the light for reading and the room's humidity, impacting library materials collection.

Regarding the vision and mission, the STKIP Muhammadiyah library compiled it to measure its success level and as a material for evaluating the library and preparing the next library work program.

Then, the STKIP library prepared a work program to measure the success level as a guide and library evaluation material.

4.2. Information technology (IT)-based library organizing in STKIP Muhammadiyah Kuningan

The interview results with the chairman of STKIP Muhammadiyah Kuningan regarding organization proved that the STKIP Muhammadiyah Kuningan library had fulfilled the elements of organizing, as evidenced by the interview results with the vice-chairman I:

“In terms of organizing the sub-division, the UPT library in the STKIP Muhammadiyah Kuningan institution divides several tasks and positions: chairman, vice-chairman I for the academic section, and head of the library. Below is a service section, a development section, a processing section, and an informatics section. It is the organizational structure in the STKIP Muhammadiyah Kuningan library. If there are things that need to be coordinated regarding the development of library programs, some organizing elements are in synergy with each other according to their respective duties and main functions.” (W.W.K. STKIPMK)].

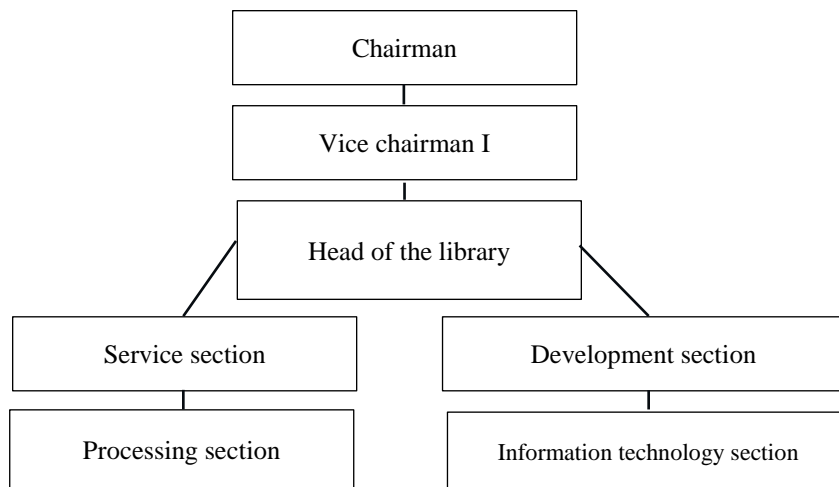


Figure 2. STKIP Muhammadiyah Kuningan library organization structure

The detailed duties and responsibilities of the library organization at STKIP Muhammadiyah Kuningan are as follows:

Table 3. Primary duties and responsibilities in organizing library

No.	Position	Duties and responsibilities
1.	Head of the library	Leading, managing, and developing libraries Formulating and defining library policy Collaborating with various parties Preparing library HR development program
2.	Processing section	Carrying out an inventory of library collections Carrying out input collection data on library automation systems Carrying out the complete collection process
3.	Service section	Carrying out circulation services: borrowing, extending, and returning Carrying out membership administration services Recording administration of incoming and outgoing mail
4.	Development section	Designing and preparing library development: collections, services, facilities, and infrastructure Organizing creativity-enhancing activities Designing and implementing innovative programs Assisting in the information literacy implementation
5.	Information technology section	Carrying out maintenance and repairing of library information systems Managing internet network system Designing and developing digital libraries Assisting in the information literacy implementation

The organization in the STKIP Muhammadiyah library consists of the chairman of the institution, vice chairman, head of the librarian, librarian (processing section), service section, development section, and information technology section, while their organizational duties and responsibilities are:

The chairman of the institution is the person who is responsible for the continuity of an organization. One of the main tasks of the chairman of STKIP Muhammadiyah Kuningan is to oversee the UPT institutions under him, including the UPT Library. Every policy [16] implemented in the Muhammadiyah Kuningan library must be known and approved by the institution's chairman.

The main task of the vice-chairman at STKIP Muhammadiyah Kuningan is to oversee the fields of the institutions under him, including the library, academics, and human resources or personnel.

The head of the library is responsible for the sustainability of the STKIP Muhammadiyah Kuningan library. In this case, the main task is to design, regulate, and make policies in the library. These policies come from institutions and the government. The head of the STKIP Muhammadiyah Kuningan library had an undergraduate background in the library.

Then, the librarian at STKIP Muhammadiyah is qualified with an undergraduate background in the library. Thus, there was no doubt in terms of processing and managing the library. In addition to managing the library, the librarian at STKIP Muhammadiyah Kuningan has detailed tasks, including registering members and processing library books from procurement, processing, and service. With the help of IT, librarians were greatly helped in processing. However, librarians did not record conventionally and only entered the book data into the library application. There were three librarians listed in the STKIP Muhammadiyah Kuningan library.

Officers/technical personnel at the STKIP Muhammadiyah Kuningan library are tasked with assisting librarians in terms of administration, service, and other technicalities in the library. In addition, two officers or technical staff were librarian assistants and had Bachelor of Education qualifications.

The library development section is tasked with carrying out promotions, such as designing brochures for promotional events or activities for the STKIP Muhammadiyah Kuningan library inside and outside the institution.

Furthermore, the STKIP Muhammadiyah library involved the librarian and the institutional IT team in the design. The institutional IT team provided IT needs or IT technicians as assistants to the needs desired by the library, starting from procurement and installation. Meanwhile, the librarian, in this case, was a user that the IT institution had provided. The available computers worked with the IT team to operate the library application because the librarian understood how to use it. With this knowledge and skills, this group designed and maintained an IT-based library system according to the STKIP Muhammadiyah Kuningan library users' needs.

The institution has also prepared several strategies in terms of quality assurance of human resources in the library. Apart from selective employee recruitment, the institution has continued to monitor the existing human resources in the following ways: participating in training or workshops, conducting coaching, evaluating HR, and giving prizes.

In this case, those involved in training or workshops were all librarians and staff in rotation. The training followed started at the regional, provincial, and national levels. It aimed to (a) increase the knowledge of librarians and library staff, (b) add insight or work experience in other places for all STKIP Muhammadiyah Kuningan librarians, (c) add credit points to serve as the basis for an annual assessment evaluated every year in the form of Employee Workload (BKK), and (d) become a different motivation and proud of the profession as a librarian and staff.

Moreover, coaching was carried out by the institution regularly at the library. So far, those who carried out the coaching came from elements of leadership [17][18][19][20], representatives, quality assurance institutions, and heads of sections in charge of the library. Coaching was also held regularly, either weekly, monthly, or yearly.

In terms of evaluating the existing human resources in the library, the institution prepared a strategy, including looking at attendance. Attendance was done by fingerprint every day. If they did not meet the requirements, the employees would be penalized. Furthermore, the evaluation was seen from the job sheet, an employee worksheet that all library employees must fill out daily. If they did not fill in, they would be called and given directions, even sanctions if they did not fill in for several days.

In addition, prizes were given to outstanding library staff. For example, a librarian won as the best librarian or any achievement, and then the institution gave a prize in the form of coaching money or a salary increase. It was adjusted to the achievements of the library staff.

Of the several strategies carried out by the institution, all aimed at ensuring the quality of human resources in the STKIP Muhammadiyah library improves further. Aside from human resources, in terms of planning, library management based on technology and information was also prepared, so there were various other strategic ways.

4.3. Information technology (IT)-based library implementation in STKIP Muhammadiyah Kuningan

Some stages passed in actuating information technology-based libraries at the STKIP Muhammadiyah Kuningan included the following: (a) provision of computer equipment. The STKIP Muhammadiyah library divided the procurement of computer equipment into groups: computers for librarians or service personnel, computers for administration (ADM), computers for Online Public Access Catalog (OPAC) tracing services and electronic visit lists

(one package with OPAC), and computers for general users for internet browsing, typing, and others. (b) Provision of library application tools: the application used by the STKIP Muhammadiyah library was an open-source application. (c) The installation stage was carried out by the librarian and assisted by the library-IT team. (d) The librarian did the use stage entirely because it contained menus that the librarians could understand according to their field of knowledge. (e) Library services: STKIP Muhammadiyah Kuningan library indeed could not be separated from the terms of service provided.

The interview results with the chairman of STKIP Muhammadiyah Kuningan showed that:

"The STKIP Muhammadiyah Kuningan library, in terms of its implementation, involves the IT team using the Senayan SLiMS application. It is the hard work of the library to seek information from various sources, including FPPTI, the library in the Ministry of Education and Culture, and other sources of information. However, in this case, we hand all management and application development policies over to the head of the library and the library IT team. With their hard work results, the STKIP Muhammadiyah Kuningan library has been accredited and can serve all library members well. As chairman, I only control how the application is used. If there are deficiencies or obstacles, we also provide input for the continuity of the library." (W.W.K.STKIPMK)]

STKIP Muhammadiyah library has used the Senayan Library Management System (SLiMS) application since 2011. At that time, it was still using the lowest type of application, i.e., the *matoa* type. From year to year, its use continues to be upgraded by SLiMS developers. Until this study, the application utilized was the 2018 version of the SLiMS application, namely SLiMS Acacia. The SLiMS application can be used online or offline.

According to information sources from the interview with the head of the STKIP Muhammadiyah Kuningan library, it was uncovered:

"The application used in our library is called the Senayan application or in full Senayan Library Management System (SLiMS), information and technology-based library software for an open-source library management system licensed under the GPL v3. The web application developed by a team from the Information and Public Relations Center of the Ministry of National Education of the Republic of Indonesia was built using PHP, MySQL database, and Git version controller. In 2009, Senayan won INAICTA 2009 for the open-source category. In terms of developing and utilizing the library application, the head of the institution fully hands it over to us as the head of the library and the IT team of the STKIP Muhammadiyah Kuningan library." (W.W.KP.STKIPMK)]

In addition to the Senayan Library Management System (SLiMS) application, there was also an additional application as a companion or complement, i.e., the EDDC (electronic Dewey decimal classification) application. This application helps determine the classification number of books.

There are several stages in this library application, from the installation to the use stage. The stages in detail are the installation stage, the use stage, and the shortcut.

Moreover, Online Public Access Catalog (OPAC) is a computer-assisted online catalog that librarians and users can access. In its use, librarians or users enter keywords. These keywords can be from the book's title, the author, or the book's subject. With the Online Public Access Catalog (OPAC), library users do not have difficulty browsing through a collection of books like they used to be manual. In the previous manual search, library users browsed the catalog cards individually. The following is an Online Public Access Catalog (OPAC) owned by the STKIP Muhammadiyah Kuningan library.



Figure 3. Online public access catalog (OPAC)

Furthermore, the library indeed cannot be separated from the term service. Therefore, services provided at the STKIP Muhammadiyah Kuningan library included borrowing services, library member services, reference services, free internet services, Muhammadiyah corner services, multimedia services, Friday free coffee services, educational teaching aids collection services, library guidance services, scientific works services, digital information services (library websites, online public access catalog, digital repository), e-journal and e-book services, innovative and creative services, and BI corner services.

The stages were explained in an interview with the IT team of the STKIP Muhammadiyah Kuningan library, as follows:

“To run a library application, there are several stages to go through, including the installation and usage stages. These steps must be carried out properly. However, there are often obstacles at the installation stage due to trouble or lack of support for computer and network devices. We should have looked at the type of computer and the specification at the installation stage because each computer has different applications that can be used.” (WW.TI.PSTKIPMK)]

This service is a grant from BI for the STKIP Muhammadiyah Kuningan library, in which facilities are provided, starting from collecting library materials and other facilities.

Table 4. Innovative works of STKIP Muhammadiyah Kuningan library

No.	Innovative/Creative Works	Development Section	Description
1.	Coffee Free Friday	Library promotion	It is a program that provides free coffee and tea for library visitors. It is also one of the efforts to attract interest in visiting the library.
2.	Muhammadiyah Corner	Collection development	It is a program to provide special collections in the field of Muhammadiyah and is a unique and separate collection from religious collections in general.
3.	Hangout area	Service	It is an effort to bring students closer to the library. This hangout area is a facility that offers the freedom to develop oneself.
4.	List of collection master number logger	Processing	It serves as a tool in recording and determining the master number of the collection because each copy of the book owned by the library must have a unique and independent book number.
5.	Learning media works	Collection development	It is a program of collecting student work on learning practices. It can be in the form of calculating tools, using used goods, works of art, learning methods, creating computer applications, and others.
6.	Guidance for literacy ambassadors	Student promotion/involvement	It guides and facilitates active and happy students in library socialization, reading interest, and information literacy. It includes involvement in the promotion of prospective new students.
7.	Literacy Club	Student promotion/involvement	It is an effort to approach students so that the library has regular visitors, and the most important thing is that students can develop their potential in the field of interest through problem-solving discussions based on scientific references.

The following is an explanation of the interview results with the IT team of the STKIP Muhammadiyah Kuningan library:

“To use the library application, there are several computers to prepare. At a minimum, the computer consists of three units: a service computer, a processing computer, and a visitor computer. The service computer serves students for lending transactions, returns, checking loans, inputting library members, and printing library members. The processing computer processes bibliographic book data, such as input bibliographic data, printing book labels, book cards, and other processing administrative activities. Meanwhile, the visitor's computer is used for visitor attendance lists, OPAC (Online Public Access Catalog) searches, and other information searches.” (W.W.TIM.IT.STKIPMK)]

The interview results with STKIP Muhammadiyah Kuningan students revealed that:

“I borrowed books or returned books several times. In its transactions, it uses the computer that has the library application installed. It is indeed quite helpful in terms of service because the transaction becomes fast. The only drawback is that the service will be hampered if there is a power outage. Once, when borrowing a book, the lights went out, and the recording became manual. It might be the drawback.” (W.W. MHS.STKIPMK)]

It was also responded to by the STKIP Muhammadiyah Kuningan librarian:

“Yes, so far, the factor that hinders this library automation service transaction is when there is a power outage. It cannot be avoided because there is no backup electrical energy from the campus in case of a power outage from the PLN. As a result, the service was

disrupted. Therefore, we have coordinated with the campus to prepare generator facilities. This facility is not only for the completeness of the library but also can be used by other services so that all types of transactions at STKIP Muhammadiyah Kuningan can become smooth, and there are no obstacles.” (W.W.PTGS.P.STKIPMK)]

The details of the computer functions in the STKIP Muhammadiyah library are as follows. (a) Service computers were used to serve users' needs, utilized by the librarian to record user transactions starting from borrowing, borrowing history, record fines, membership input, and print membership cards. This computer also stored digital data collections, such as non-book collections, journals, and student thesis collection files. (b) Librarians use a processing computer to input books, bibliographic data, and print book accessories, such as book labels, book cards, and other book accessories. The processing computer included several applications, including slims applications and classification number determination applications or EDDC (Electronic Dewey Decimal Classification). Also, (c) user/visitor computers were provided for library visitors to meet the needs of visitors or users, in this case, students, staff, lecturers, and other general visitors. The STKIP Muhammadiyah Kuningan library also provided this computer for the attendance list of visitors.

In addition, bibliographic data retrieval services in the STKIP Muhammadiyah Kuningan library were listed in a system called Online Public Access Catalog (OPAC), a computer-assisted catalog. In the past, users browsed the collection of books through catalog cards stored in the catalog cabinet in the library. With the OPAC, students or other visitors could browse through the user's or visitor's computer. Besides, the library also provided several other computers to browse other things, such as browsing and others.

4.4. Information technology-based library control at STKIP Muhammadiyah Kuningan

Control aims to supervise the continuity of an organization so that the organization's functions run well. In this case, the control carried out by the institution of the UPT Library STKIP Muhammadiyah was divided into three main points of control.

It was revealed in an interview with the chairman of STKIP Muhammadiyah Kuningan:

“Controlling and evaluation at the STKIP Muhammadiyah Kuningan library are carried out in three main points: controlling time, cost, and budget. Some of these controls and evaluations are monitored daily, monthly, or yearly. For that, we from the institution asked the head of the library about the three types of reporting. Thus, with this report, we can monitor and evaluate the movement of the STKIP Muhammadiyah Kuningan library in terms of budget.” (W.W. K.STKIPMK)]

Therefore, the three controls carried out by the institution to the UPT library of the STKIP Muhammadiyah are as follows: controlling of time, cost, and budget, described in detail below.

Regarding time control, the institution supervised the job sheets reported on a daily, monthly, and yearly basis according to the needs of the institution's leadership [21], [22]. The purpose was to monitor the performance of librarians and library staff of STKIP Muhammadiyah Kuningan.

In controlling costs, the institution consistently monitored records of income and expenditure by library income and matched them with the realization of the financing.

Concerning budget controlling, the institution continually monitors the income records or budget provided to the library and income obtained from the library from within and outside.

5. Discussion

First, planning is the most basic management function of all other functions. Planning involves two essential things, i.e., goals and plans. Goals are the results expected by individuals, groups, or all organization members, while plans outline how the goals (final results) will be achieved, including allocating resources, scheduling, and implementing what is necessary to achieve goals. Without a plan, the library will not achieve its intended purpose.

The term management has been known by various circles. However, the essence of management is relative, as an activity can run more regularly based on procedures and processes. In general, it is said that management is a typical process consisting of planning, organizing, mobilizing, and controlling actions to achieve the goals set through human resources and other resources [23].

Specifically, planning in the library is not as easy as one might imagine because most libraries are indeed run with the allocation of human resources and facilities and infrastructure that have been “given” or rationed. However, the library must continue to do various planning. Likewise, it was experienced by the STKIP Muhammadiyah Kuningan library.

In addition, the knowledge of media must also be owned by librarians to support improving services to users. A librarian must always be up to date in following the available information, especially in library science. It can be done by frequently attending seminars, workshops, and training. Seminars or conferences are also a medium for sharing knowledge about library management. It will make librarians and users more well-developed to contribute more to their institutions [12].

In the context of education management, it can be interpreted that management is the application of quantitative methods in empowering human knowledge to improve services to become organizational input, improve all crucial processes in educational organizations, and enhance efforts to meet the needs of stakeholders and services at present and in the future on an ongoing basis [24].

In terms of providing facilities to meet the needs of stakeholders in the STKIP Muhammadiyah Kuningan library, the library fulfilled it to various library users, both librarian’s computers and library users’ computers.

On the other hand, the non-printed books in the STKIP Muhammadiyah Kuningan library are collections of books not displayed in the form of physical books. Instead, the book is a digital book in the form of files stored on a hard disk. Specifically for digital books, the files are in the form of digital books, student theses, journals, and other digital book collections, often accessed by students and librarians. Meanwhile, access is still in the development stage. In the future, the library will develop this non-printed book into a system, i.e., a digital library.

Computers and the internet are also inseparable in terms of IT-based library management. In this case, the STKIP Muhammadiyah Kuningan library, in meeting the needs of its users, provided computer and internet facilities and supporting applications, both in data processing, services, and browsing book collections.

Second, organizing a library is several activities in the preparation and establishment of working relationships between people in an institution or organization, in this case, the library, so that a single business unit is realized in achieving the goals set by the institution. Meanwhile, in terms of the organizational structure used in the STKIP Muhammadiyah Kuningan library, a command organization structure was found.

In organizing information technology-based libraries, the organization has a general meaning. First, it denotes an institution or functional groups, such as a corporate organization or hospital. Second, it deals with organizing as a way in which the activities of an organization are allocated and assigned among its members so that organizational goals can be achieved efficiently [2].

There was also a clear division of duties and authorities in the job description of the STKIP Muhammadiyah Kuningan library, and all of those would impact the effectiveness of performance by the respective sections and professionalism in outline about the organization in the STKIP Muhammadiyah library, which can be seen from the organizational structure figure.

Third, from the researchers' information after researching at the STKIP library, the researchers explained the implementation of information technology-based libraries at the STKIP Muhammadiyah Kuningan library, starting from procurement to library services. The information obtained came from the head of the institute, the head of the library, the librarian, the technical officer, and students as library users.

Fourth, developing library management as an information center is vital because sound library management will support the learning process. Management development in the library has a reference, namely planning, organizing, actuating, and controlling (POAC). The application of the POAC reference certainly does not want a library to be stagnant in management development but wants development in library management instead [8].

6. Conclusion and Recommendations

This study aimed to determine IT-based library management in Islamic higher education. Based on the research results conducted at the STKIP Muhammadiyah Kuningan library, it was concluded that digital-based library management could be applied through (1) the planning prepared at the STKIP Muhammadiyah Kuningan library, consisting of the preparation of human resources, institutional IT teams, and infrastructure. In terms of human resources, it was quite good to meet the total capacity needs, while in terms of facilities and infrastructure, it needs to be improved again, given that the development of book collections continues to increase every year. (2) The organization in the STKIP Muhammadiyah Kuningan library was quite well structured according to the main tasks and functions, starting from the institution's chairman, vice-chairman I, vice chairman II, head of the library, and library staff. (3) In actuating the STKIP Muhammadiyah Kuningan library management, starting from human resources, book collections, facilities, and infrastructure, there were still some shortcomings that must be improved, but in general, it was quite good. In addition, (4) IT-based library management control at the STKIP Kuningan Muhammadiyah library was exceptionally well organized, starting with time and cost control. The reporting in the controlling process carried out by the STKIP Muhammadiyah Kuningan library started from the daily job sheets of the librarians or library staff, looking at the library programs made daily, monthly, and yearly. Based on the study results, the application of digital-based library management at STKIP Muhammadiyah Kuningan, in principle, had been carried out well, but it needs to improve management in HR, infrastructure facilities, and the IT system.

From some findings in the research conducted by the researchers at the STKIP Muhammadiyah Kuningan library, recommendations can be given: (1) there needs to be better prepared in terms of the library application installation process because the application will later load quite heavy data so that the computers in the library need large memory. (2) In the installation process, the library needs to make a manual so that when one forgets the steps,

they can see the manual directly, and the manual can be used by other parties who need it. (3) In organizing, it is necessary to add a librarian. It is because the number of library collections each year increases significantly, resulting in the processing of library materials being hampered so that many abandoned books have not been processed. Also, (4) in control, the institution can add CCTV because the room is large enough to supervise the active users in the library to be monitored by the librarian and maximize the control of the institution's leadership to the library staff.

Further, the findings imply that at the STKIP Muhammadiyah Kuningan library, digital-based library management could be applied, starting with planning, organizing, implementing, and supervising library management, which is expected to improve the quality of human resources and library management itself.

References

- [1] S. Sri, Materi Pokok Literasi Informasi. Jakarta: Universitas Terbuka, (2015)
- [2] A. Saleh, Pengembangan Perpustakaan Digital. Jakarta: Universitas Terbuka, (2015)
- [3] A. Karim and D. Afnan, "Kiai interpersonal managerial: Henry Mintzberg perspective," *J. Leadersh. Organ.*, vol.2, no.2, pp.75–90, (2020) DOI:10.22146/jlo.56290
- [4] A. Karim, "Managerial inspiration in the traditional pesantren," *Umr. - Int. J. Islam. Civilizational Stud.* (EISSN 2289-8204), vol.3, no.3–1, pp.73–84, (2016) DOI:10.11113/umran2016.3n3-1.150
- [5] A. Karim, F. Mansir, Saparudin, Tumin, and H. Purnomo, "Managerial leadership in boarding and public school: An idea and experience from Indonesia," *Talent Dev. Excell.*, vol.12, no.2, pp.4047–4059, (2020), [Online]. Available: www.iratde.coM
- [6] I. Kartika, Saepudin, U. Wahyudin, Junaedi, Y. H. Setiawati, and A. Karim, "The effect of transformational leaders, academic culture on the lecturer of university performances in the coronavirus era," *Webology*, vol.19, no.1, pp.2504–2524, (2022), DOI:10.14704/WEB/V19I1/WEB19168
- [7] O. Sumiati, Pengelolaan Perpustakaan Sekolah. Jakarta: Universitas Terbuka, (2011)
- [8] Setiawan, "Pengembangan Manajemen Sebagai Pusat Informasi Pendidikan di STAIMA Al-Hikam Malang," STAIMA, (2019)
- [9] A. Ibrhahim, "Konsep Dasar Manajemen Perpustakaan dalam mewujudkan Mutu Layanan Prima Dengan Sistem Temu Kembali Informasi Berbasis Digital," *Khijannah Al-Hikmah UIN Alaudin Makassar*, vol.2, no.2, pp.1–15, (2014)
- [10] R. Eti, Sistem Informasi Manajemen, Edisi 2. Jakarta: Mitra Wacana Media, (2013)
- [11] M. Z. Muttaqien, Dasar-dasar Teknologi Informasi. Jakarta: Universitas terbuka, (2010)
- [12] M. N. Husunun, Menuju Kepustakawanan Perguruan Tinggi Muhammadiyah Aisyiyah berkemajuan. Surakarta: UMS Library, (2017)
- [13] D. S. Prawiradilaga, Wawasan Teknologi Pendidikan. Jakarta: Kencana & Pranada Media Group, (2012)
- [14] Sugiyono, Metode Penelitian Manajemen. Bandung: Alfabeta, (2016)
- [15] M. B. Miles and A. M. Huberman, "Qualitative data analysis: An expanded sourcebook," 2nd ed. London New Delhi: Sage, Thousand Oaks Publications Sage, (1994)
- [16] A. Karim, A. Faiz, N. Nur'Aini, and F. Y. Rahman, "The policy of the organization, the spirit of progressivism Islam, and its association with social welfare educators," *Tatar Pas. J. Diklat Keagamaan*, vol.16, no.1, pp.69–75, (2022)
- [17] A. Karim, A. Bakhtiar, J. Sahrodi, and P. H. Chang, "Spiritual leadership behaviors in religious workplace: The case of pesantren," *Int. J. Leadersh. Educ.*, vol.00, no.00, pp.1–29, (2022) DOI:10.1080/13603124.2022.2076285
- [18] A. Karim, N. F. Mardhotillah, and M. I. Samadi, "Ethical leadership transforms into ethnic: Exploring new leaders' style of Indonesia," *J. Leadersh. Organ.*, vol.1, no.2, pp.146–157, (2019) DOI:10.22146/jlo.44625

- [19] A. Karim, H. Purnomo, F. Fikriyah, and E. N. Kardiyati, "A charismatic relationship: How a Kyai's charismatic leadership and society's compliance are constructed?" *J. Indones. Econ. Bus.*, vol.35, no.2, pp.129-143, (2020) DOI: <https://doi.org/10.22146/jieb.54705>
- [20] A. Karim, "Managerial leadership in green living pharmacy activities for the development of students' environmental care in elementary schools," *J. Crit. Rev.*, vol.7, no.13, pp.714-719, (2020) DOI:10.31838/jcr.07.13.125
- [21] A. Karim, H. Purnomo, F. Fikriyah, and E. N. Kardiyati, "A charismatic relationship: How a Kyai's charismatic leadership and society's compliance are constructed?" *J. Indones. Econ. Bus.*, vol.35, no.2, pp.129-143, (2020) DOI:10.22146/jieb.54705
- [22] D. Widiantari, M. I. Bin Samadi, and A. Karim, "Charismatic leadership effects of teachers in fostering graduate quality of the senior high school," *J. Leadersh. Organ.*, vol.4, no.2, pp.179-190, (2022) DOI:10.22146/jlo.74872
- [23] G. Terry, *Prinsip-prinsip Manajemen*. Bandung: Pustaka Pelajar, (2006)
- [24] Iswan, *Administrasi dan Manajemen Pendidikan*. Depok: RajaGrafindo Persada, (2018)

Authors

Muhammadun

Islamic Criminal Law, Faculty of Law, Institut Agama Islam Bunga Bangsa Cirebon, Jl. Widarasari III Tuparev Cirebon, Indonesia

This page is empty by intention.