Job Market Mapping of Library Workers in Indonesia: 2019-2024

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Abstract

The growing number of Library and Information Science (LIS) Study Programs in Indonesia has resulted in a surge of graduates in this field. To ensure a link and match between labour demand and graduate qualifications, job market demands need to be identified. This study aims to identify job market qualifications based on demographic characteristics, as well as the requirements for soft and hard skills. Quantitative content analysis is used to measure the frequency with which requirements appear in job advertisements. A total of 390 advertisements shared on the "Lowongan Kerja Pustakawan" and "Lowongan Pustakawan" Facebook accounts from 2019 to 2024 are analysed. This study employs two coders to ensure the reliability of the findings. The results show that most positions did not require specific demographic characteristics, except educational background. The most required soft skills are collaboration and communication. Meanwhile, language, collection management, and ICT skills are the hard skills of library workers. This research contributes to providing critical information for library science study programs, enabling their graduates to acquire qualifications that meet the job market's needs.

Keywords: Demographic Characteristic; Hard Skills; Job Advertisement; Library Job Demand; Soft Skills

A. Introduction

Library and Information Science (LIS) study programs are growing, from 20 study programs for bachelor's degrees in 2014 (Nashihuddin, 2014) to 54 study programs, both in public and private universities, in 2024 (BAN-PT, 2024). This growing number indicates that more graduates need to be absorbed into the job market. However, the absorbance is affected by the availability of the job vacancy. According to data from the National Library, there is a 439,680 demand for librarians across all library types in Indonesia (Ihsan, 2023).

Numerous earlier studies on librarian mapping, which demonstrate the unmet needs of librarians, further corroborate this assertion. This situation exists in the Ministry of Agriculture, where only 30.8% of libraries have Pustakawan Terampil, and 38.5% have Pustakawan Ahli, according to the librarian functional rank (Andriaty et al., 2020). The same condition is experienced by the UIN Raden Fatah academic library, which has a shortage of 20 librarians (Nurmalina, 2021).

The findings above illustrate the lack of need for the librarian profession from a quantitative perspective. However, the need for librarians is not only about quantity, but also about the quality of graduates who meet the evolving demands of the librarian profession. In terms of quality aspects, Arwendria (2019) stated that librarians' digital competencies are still in relatively short demand in Indonesia. In addition, the librarian qualifications applied in Indonesia are also lagging behind the qualifications of librarians abroad, as can be seen from the request for qualifications that are limited to mastering

SLIMS and having a diploma (Ridlo & Farida, 2018). This information was obtained through a review of job advertisements.

Job advertisements can provide an overview of the qualifications required by stakeholders. Analysing job advertisements can offer a valuable overview of the recruitment landscape in librarianship (Plassche, 2022). Furthermore, job advertisements facilitate the analysis of changes made to professional requirements (Yang et al., 2016).

Previous studies on librarian needs, based on job vacancy analysis, have highlighted the core competencies demanded by the market and the competencies required to become a data librarian. In reviewing journal articles in Indonesia, a discussion of the digital competencies of librarians in Indonesia is presented, based on a job vacancy analysis. The first study of librarian advertisements addressed the market demand for librarian competencies. Yang, Zhang, Du, Bielefield, and Liu (Yang et al., 2016) studied advertisements and matched the qualification demands in the advertisements with the core competencies of librarians according to the American Library Association. This research was conducted using data mining of advertisements from 2009 to 2014. The data mining results were processed using the Latent Semantic Analysis (LSA) technique and showed that there are similarities between the requests and the core competencies of librarians issued by ALA, namely (1) Interpersonal skills which include "Communication skills", "Change, flexibility" and "Analytical, problem-solving skills"; (2) Leadership which includes "working collaboratively"; (3) Reference and user services which includes "customer service orientation"; (4) Cataloging and collection development; and (5) Technology knowledge and skills which includes "general technology knowledge" and "electronic resources"

In contrast to the above research that highlights the core competencies of librarians that appear in job advertisements, research conducted by Eclevia, Fredeluces, Maestro, and Eclevia Jr (2019) focuses on the qualifications of data librarians whose needs emerged between 2013 and 2018. The advertisements for this study were obtained from searches on Google, indeed.com, ALA JobList, LinkedIn, Jobstreet.com, Glassdoor, IFLA LibJobs, Jooble, ARL job announcements, and Simplyhired.com. The results of this study show that the needs of data librarians require candidates to know the areas of research data curation and management, software, technology, and standards, research, and support, data sources, data and data lifecycle, digital repositories, subject or program area background, scholarly communication, and the tertiary and library sectors.

To identify the digital librarian competencies in demand, the study was conducted based on an analysis of librarian job postings from 2016 to 2018 in Indonesia. There were 137 advertisements analysed, obtained through the following websites: www.loker.id, www.jobstreet.co.id, id.jobsdb.com, www.lokerindonesia.com, www.duniaperpustakaan.com. id.jooble.org, id.indeed.com, and http://pustakawanjogja. blogspot.com, and vacancy.trovit.co.id. The analysis shows that the knowledge and skills needed by digital librarians are 1) Computer basics, Internet, 2) Database and Electronic Services, 3) Website Design and Management, 4) Basic Programming & Database Design, 5) Computer Networking, and 6) Computerised Cataloguing & Library Software (Arwendria, 2019).

The three previous studies above focus on the competencies and knowledge that librarians should possess. In contrast, advertisements indicate that the job market in Indonesia demands not only hard skills but also demographic characteristics and soft skills. Moreover, "librarian" has a specific meaning in Indonesian regulations; therefore, the term does not include library workers or assistant librarians, as also used in job advertisements. Thus, to fill this gap, this research also analyses all positions in the library field, including demographic characteristics, as well as soft and hard skills. Demographic

characteristics demand analysis to assess inclusiveness in the current recruitment of library workers.

B. Reserch Method

The content analysis used in this research is quantitative content analysis. According to Eriyanto (2015), in quantitative content analysis, the researcher's focus is on accurately calculating and measuring the dimensions of the text. In contrast, descriptive quantitative analysis aims to provide a detailed description of a message or a particular text, rather than testing a specific hypothesis. This research analyses job advertisements to identify the requirements of library workers, focusing on demographic characteristics, soft skills, and hard skills.

The job advertisements were collected from two Facebook accounts, namely "Lowongan Kerja Pustakawan" and "Lowongan Pustakawan". Both accounts were selected based on the highest number of followers compared to other similar accounts, which had 5,979 and 12,951 followers, respectively, as of April 2025. A total of 390 samples were selected from 2019 to 2024 using a purposive sampling technique. The sample selection was carried out based on 1) the image format, 2) the clarity of the vacancy provider institution, and 3) the completeness of the information contained in the advertisement.


Figure 1: Examples of Excluded Advertisements

The advertisements in Figure 1 are examples that lack clear information regarding the institutions providing the job vacancy and the qualifications required of prospective workers. Therefore, advertisements such as those in Figure 1 were excluded from this study. To maintain the validity of the data, this study involved two coders to identify the words that appeared in the text. This research applied inter-coder reliability to measure the agreement between both coders. The identified words were categorised into three qualifications: demographic characteristics, soft skills, and hard skills. Afterwards, each word was counted based on its frequency of occurrence in the text. The results of the calculation were then presented using diagrams. The diagrams are used to visualise the number or percentage of the qualification demands. The more often words show up in the advertisements, the bigger the number or percentage that is shown on the diagrams.

C. Discussion

Before delving into the main research discussion, this study will first describe the distribution of advertisements, the types of libraries in need, and the positions required. There are 390 job vacancy advertisements disseminated in both Facebook accounts from 2019 to 2024. Figure 2 shows that the highest number of job vacancy advertisements in

the library field was distributed in 2022, with 128 advertisements. In comparison, the least number was in 2024, with 40 advertisements.
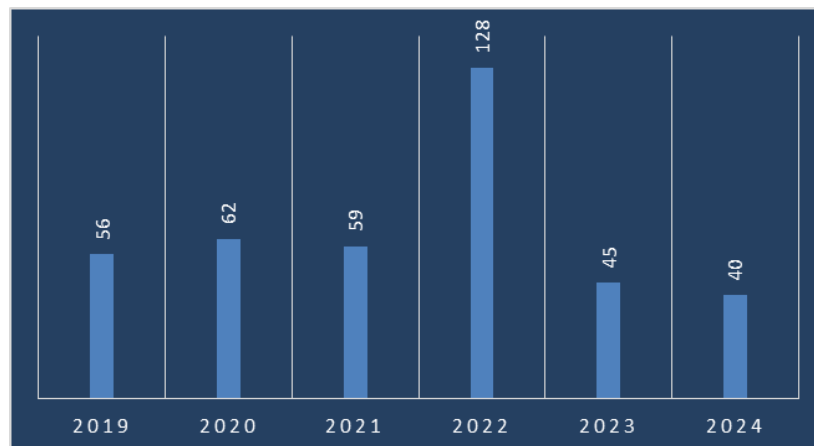
Figure 2: Distribution of Job Advertisements

The availability of job-related information on social media is reliant upon the presence or absence of the information disseminator. Many organisations frequently use job boards, social media, marketing, and other methods to find candidates for open positions (Mu'ammal et al., 2023). The social media accounts used in this study, however, are not the official accounts of a job search agency; instead, they are accounts that users use to exchange information about job openings in the library field. As a result, the quantity of advertisements supplied will vary annually. To fill the positions, 394 workers are required from 390 advertisements. This illustrates the importance of having multiple positions within a single institution.

Based on 390 job advertisements, the types of libraries in need of library workers are as follows:
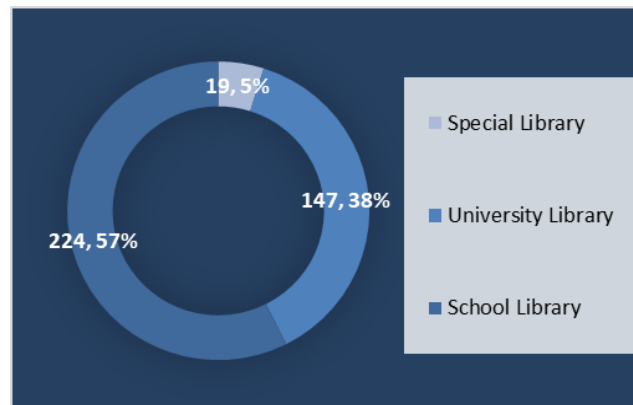

Figure 3: Types of Libraries

Figure 3 presents three types of libraries that provide job vacancies in the library field: special libraries, school libraries, and university libraries. The institution that requires the most library workers is school libraries, with 224 schools, or 57% of the total number of libraries. The school library is an integral part of an educational institution, providing a diverse range of library materials to support teaching and learning activities within the school (Apriyani et al., 2021). School librarians play an essential role in the development of the school library. Bijelic and Zorica (2020) revealed that the reputation, role, and perception of school libraries depend on the quality of school librarians, who can act as teachers, collaborators, and professionals, thereby ensuring a high reputation for school libraries. The second-highest position is occupied by universities, with 147 institutions, or 38% of the total institutions. The type of library found in a university or

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higher education institution is also called an academic library. The university library is included in the supporting facilities for the educational community wherever the university is located (Sopwandin, 2021). According to Eshbach (2020), academic librarians must work closely with faculty to develop tasks that utilise library resources in a meaningful way, thereby increasing academic engagement. A smaller percentage is shown by special libraries, with 5% or 19 institutions.

There were 394 positions in a total of 390 advertisements. The position listed in job vacancy advertisements is not limited to librarian or *pustakawan*. The advertisements used various terms for library workers as shown in Figure 4 below:
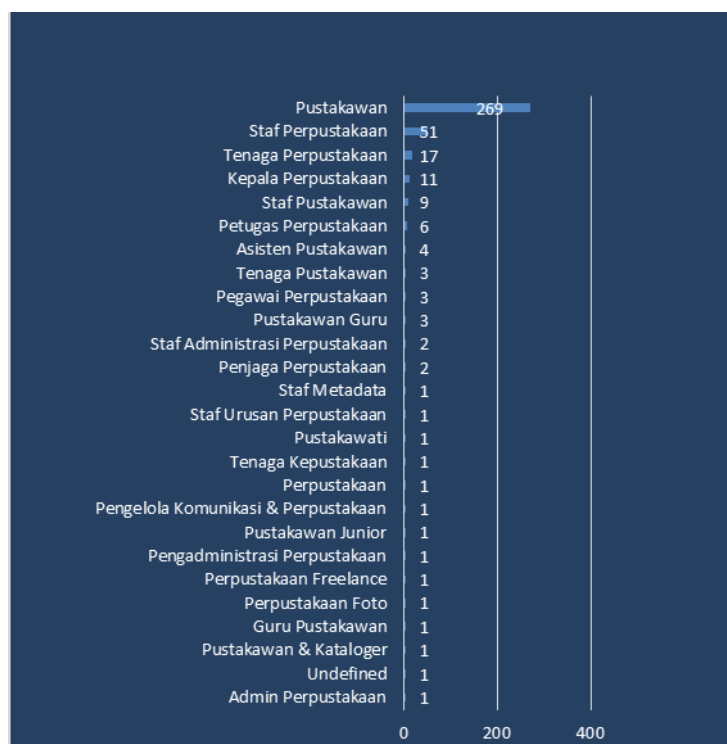

Figure 4: Types of Position

The top five most listed positions in advertisements in the last 6 years are *pustakawan* (librarian) with 269 positions, followed by *staf perpustakaan* (library staff) with 51 positions, tenaga perpustakaan with 17 positions, kepala perpustakaan (head of library) with 11 positions, and then *staf pustakawan* (librarian staff) with nine positions. The different terms used indicate the employer's view towards the librarian profession. According to Law No. 43/2007 on Libraries, a librarian is an individual who has acquired competencies through education and/or training in librarianship and is responsible for carrying out library management and services. Thus, a librarian has a distinct meaning from library staff, library personnel, and other positions.

Requirements by Demographic Characteristics

This study analysed five requirements based on demographic characteristics: gender, education background, age, marital status, and religion. For gender, most institutions provided equal opportunities for both males and females to fill the position. As Figure 5 illustrates, the term "male or female" occurred 164 times, accounting for 42% of the total advertisements. "Undefined" came second, appearing 139 times, or 35% of the total advertisements. Undefined means that no gender requirement is stated in the advertisements. Meanwhile, those that specify a male gender show a percentage of 15% or 59 times, and those that specify a female gender show a percentage of 8% or 32 times.
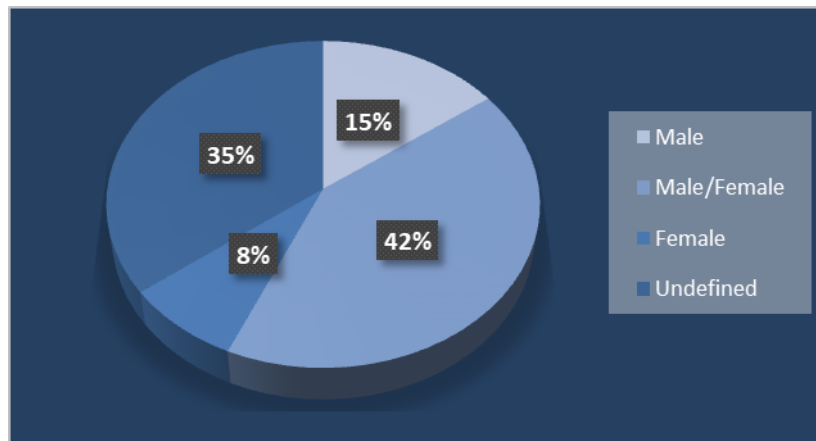
Figure 5: Requirement by Gender

An educational background requirement is a crucial qualification. As shown in Figure 6 below, most positions required a minimum academic background. Only 7 of the 394 positions did not require such a background check. The most requested minimum educational background is an S1 or a bachelor's degree, with 204 positions. The next requirement is a D3 or 3-year diploma, which is the minimum educational background required for 138 positions. The graph below also highlights an alarming fact: job applicants were allowed to apply for the required positions with only a high school education. This condition contradicts Masruri, Kuntoro, and Arikunto (2016) stating that professional librarians require a library science education background as a foundation for performing their duties.
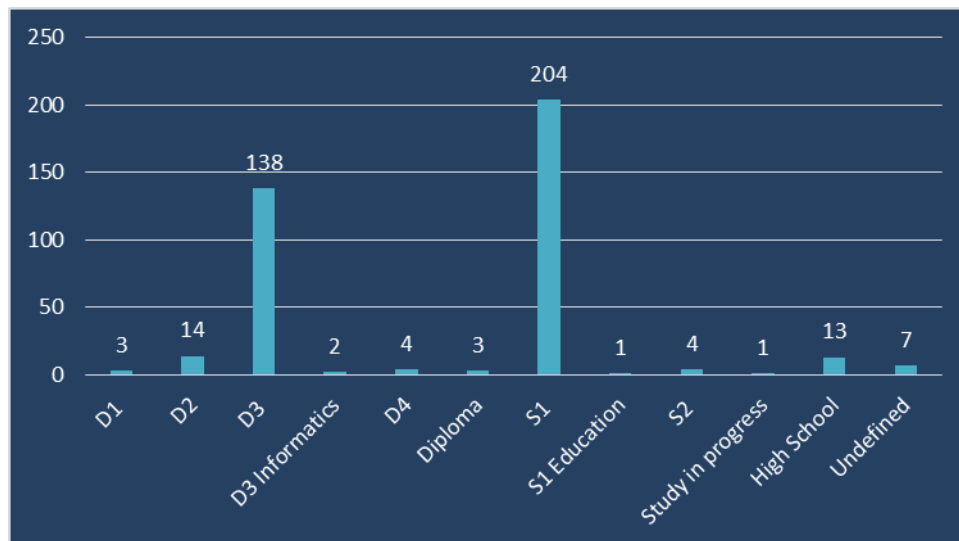
**Figure 6: Requirement by Education Background**

Maximum age-based requirements are applied to fill positions. Based on job advertisements, recruiting agencies typically set the maximum age range from 22 to 56 years old. As illustrated in Figure 7, 181 positions can be filled without any age limitation. The maximum age most required by institutions is 30 years old, with 81 positions, followed by 35 years old with 61 positions. Ningrum, Pansombut, and Ueranantasun (2020) argued that age restrictions are part of discrimination because workers should not be subject to age limits in getting a job. However, 181 positions do not require maximum age as a qualification.
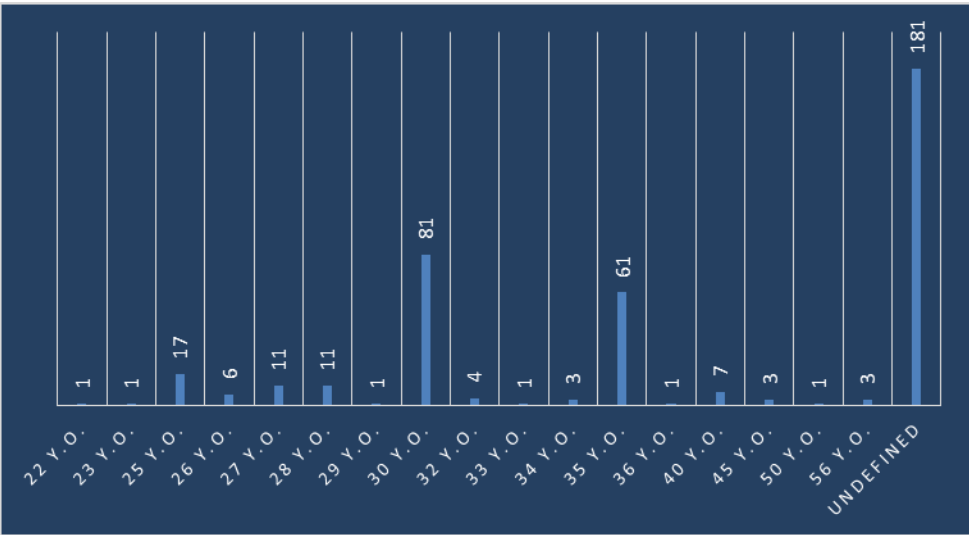
Figure 7: Requirement by Maximum Age

Marital status is one of the demographic characteristics required to fill the positions. However, Figure 8 shows that only 7% or 26 positions require "unmarried" status. Meanwhile, 368 positions or 93%, did not specify marital status as a requirement. The number of institutions that do not specify marital status is a positive finding because determining marital status is also considered part of discrimination. It is because there is no relationship between employment and marital status (Ningrum et al., 2020). This opinion is also corroborated by the results of Ibegbulam & Ejikeme's research (2021) which states that the perception of married female librarians towards the balance between family and work is positive.
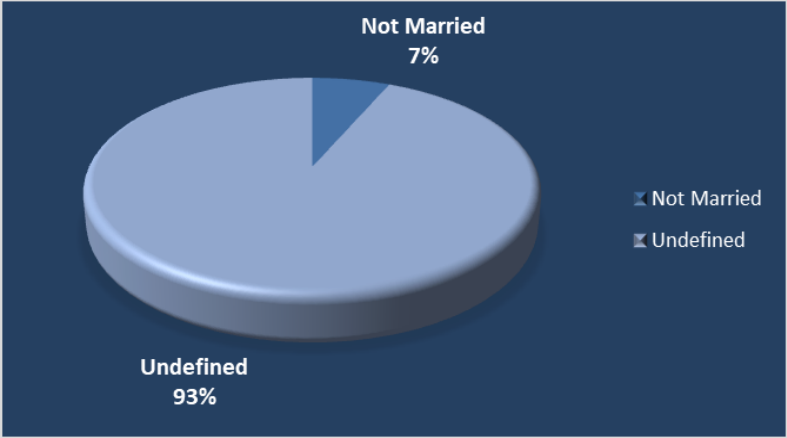
Figure 8: Requirement by Marital Status

Religion is one of the demographic characteristics that must be met due to the type of institution that houses the library. These institutions are religious educational institutions, either Islamic, Christian, or Catholic. Therefore, religion was requested to meet the conditions of the religious education they run. Figure 9 shows that more than half of the positions, specifically 70% or 276, did not require a specified religion as a qualification. Islam is the most widely practised religion, with 1.8 billion adherents or 26%. Christianity and Catholicism were next, each showing a demand of 1%. The last is Christian/Catholic with a demand rate of 2%.
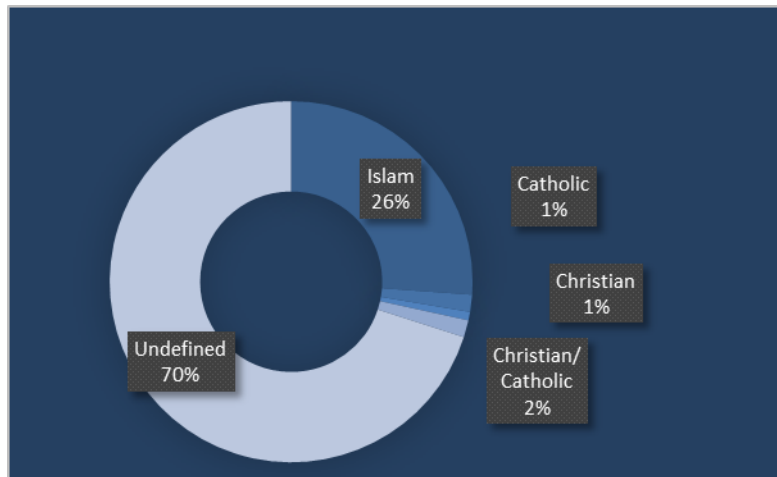
Figure 9: Requirement by Marital Status

Demographic characteristics are familiar qualifications found in job advertisements, but determining specific preferences can be a discriminatory treatment of applicants. Sembiring and Michael (2022) emphasize that institutions must pay attention to the rights of workers to be treated fairly and equally in the recruitment process. Companies must ensure that the recruitment process is impartial and avoid discrimination based on factors such as gender, religion, ethnicity, race, and other protected characteristics. Another finding states that among demographic characteristics such as gender, marital status, age, and educational background, only age and educational background have a significant influence on librarians' job performance (Ugwu & Ugwu, 2017).

Requirements by Soft Skills

Soft skills are an essential qualification that employers often specify. Out of 390 advertisements, this study identified 70 soft skills that applicants are required to possess. The top 15 soft skills most frequently featured on job advertisements are shown in Figure 10 below:
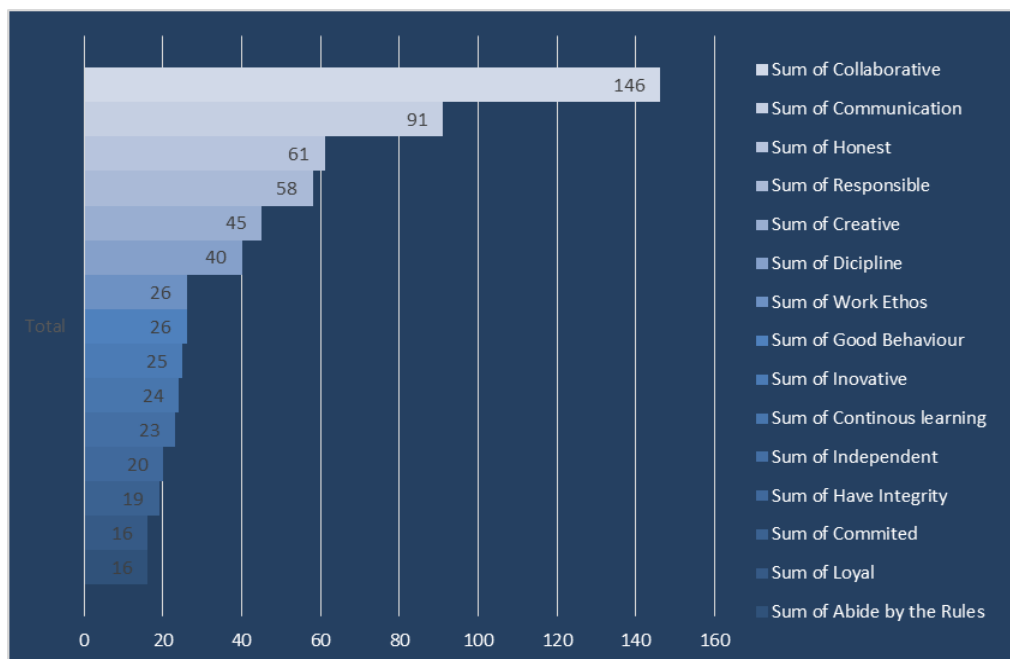
Figure 10: Requirement by Soft Skills

Figure 10 shows that collaboration is the most frequently requested soft skill. It occurred in 146 Job advertisements. Communication skills came next with 91 occurrences. Previous research on job advertisements has shown that communication is the most in-demand soft skill that prospective workers must possess. Research based on the distribution of advertisements in America shows that the demand for communication skills, both oral and written, is found in 1,807 advertisements (Creel & Welsh, 2021). Except for communication, the 15 soft skills above are different from Kumar, Singh, Ansari, and Pandey (2022) who stated that the elements of soft skills that help in managing the work environment or relationships with others are communication, critical thinking, morals, and ethics.

However, critical thinking, morals, and ethics were not listed in advertisements. Critical thinking, which is not required in advertisements, is viewed differently by employers. A study on critical thinking was deemed necessary in Portugal. The study showed that critical thinking is widely recognised by employers as a set of interrelated skills and dispositions required by new graduates, with little difference in its practical application across different professional fields (Cruz et al., 2020). Ethics is also an essential soft skill needed in the technological era, but is not a demand listed in advertisements. Librarians are faced with ethical issues. According to Jones and Hinchliffe (2023) ethical issues are particularly perilous for library professionals, who support and staunchly defend privacy and intellectual freedom. Among the numerous soft skills required in advertising, ethics, critical thinking, and morals ought to serve as complementary skills, especially in light of the widespread information breaches prevalent in the digital era.

Requirements by Hard Skills

Professional skills are the skills required to support workers in performing their jobs effectively and efficiently. The types of professional skills identified in the advertisements can be categorised into several more specific types of professional skills. This research categorises professional skills into language skills, collection management skills, and Information and Communication Technology (ICT) skills.

As shown in Figure 11 below, the required language skills for job applicants are English, Arabic, and Mandarin.
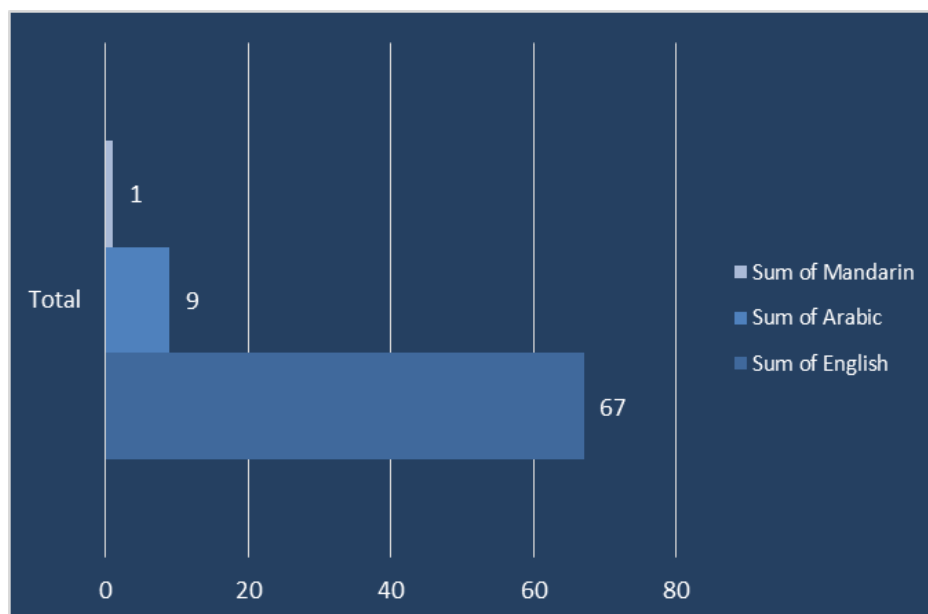

Figure 11: Requirement by Language Skills

English skills were the highest requested, with 67 occurrences. Arabic ranks second with seven occurrences. For Mandarin skills, there was one request. Language skills are demanded in the work environment and are also needed in collection management that utilises these languages. According to Abidin (2020), librarians need to master foreign languages, especially English, because a significant amount of information is presented in that language.
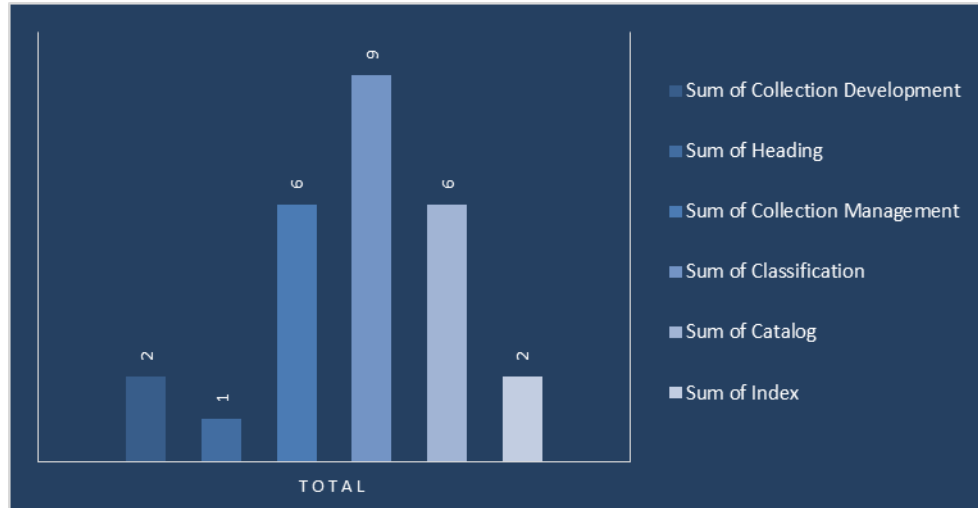
Figure 12: Requirement by Collection Management Skills

Collection management skills are listed as hard skills required for job applicants in the library. Figure 12 explains that there were 26 requests related to collection management skills. General collection management skills occurred 6 times. As part of collection development, classification is the most requested, with nine occurrences. Next are catalogue, index, collection development, and heading, with 6, 2, 2, and 1 occurrence, respectively. Collection management plays a crucial role in shaping a library's collection to fulfil the needs of its users for purposes such as studying, teaching, researching, leisure, and various other activities (Singh, 2022).
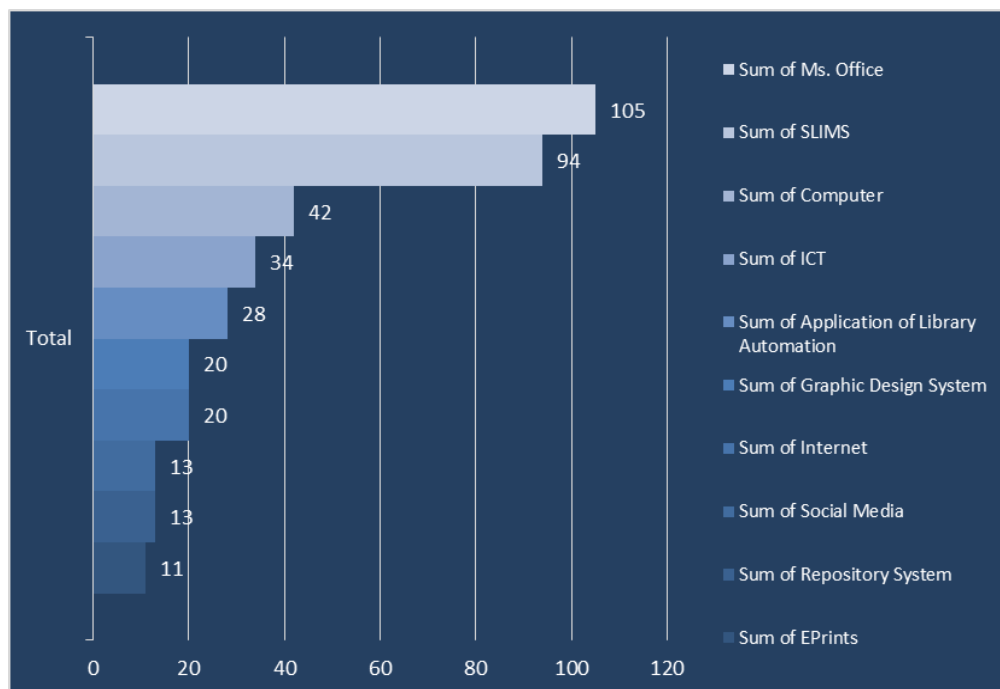
Figure 13: Requirement by ICT Skills

Figure 13 above illustrates the ICT skills requirements. The study identified 10 ICT skills with the highest demand. The ability to operate Microsoft Office topped the list, with the highest demand, at 105 occurrences out of 390 job advertisements. Came second is SLIMS with 94 occurrences. Next are computer skills, with 42 occurrences, ICT skills in general, with 34 occurrences, and the application of library automation, with 28 occurrences. The ability to operate a graphic design system and the internet has 20 occurrences. Both social media and repository systems were mentioned 13 times, while E-Prints were mentioned 11 times.

The finding about ICT skills revealed that library workers are required to not only have proficiency in library applications but also in administration, such as Microsoft Office. The proficiency in using Microsoft, which was considered one of the most important and widely used applications in all industries (Hamad et al., 2021) There are two library application skills required: SLiMS and E-Prints. SLiMS is an open-source application developed by children from around the nation. This application is widely used in various types of libraries in Indonesia. This is proven to facilitate the management of school libraries, namely in managing library administration, classifying collections, cataloguing collections, and labelling books (Purnomo & Arifin, 2021). Apart from school libraries, the benefits of using SLiMS for Higher Education Libraries, according to Kesuma, Yunita, and Meilani (2021) are to simplify librarian tasks, improve performance, librarian work productivity, and facilitate information retrieval.

The E-Prints application is software used as an institutional repository. This open-source application was developed by the School of Electronics and Computer Science, University of Southampton, and includes the use of metadata, advanced search, and other features (Rodliyah, 2016). The results of research by Perdana, Hakim, and Latiar (2022) indicate that the application of E-Prints can assist universities, such as Lancang Kuning University, in processing and disseminating grey literature. The fact that graphic design systems and social media skills made it into the top 10 ICT skills indicates that libraries are moving into a digital environment, and these tasks have become the responsibility of library workers. Most of the libraries use social media to promote their products and services, disseminate news and events related to their programs, conduct video conferencing, advertise, and facilitate research activities (Islam & Habiba, 2015).

D. Conclusion

Job advertisements represent the demand of the job market. Over the last six years, from 2019 to 2024, demand related to demographic characteristics has included age, educational background, gender, marital status, and religion. However, apart from education, more advertisements did not include demographic characteristics as qualifications. Soft skills are essential abilities that applicants should possess. This is supported by the 70 soft skills identified in the advertisements. The identified soft skills ensure that the applicant can work effectively, both independently and as part of a team. Meanwhile, the identified hard skills indicate that library workers must possess foreign language skills, primarily English, as well as collection management and ICT, encompassing both hardware and software.

Since this study analysed advertisements shared by members on two Facebook accounts, it analysed the information contained only in the advertisements, despite their brevity. Consequently, this study examined the requirements into three categories. Employing the same method, another study with more sources can be conducted by expanding the identification of library workers' tasks and responsibilities to guide library and information science study programs in preparing their graduates.

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