Chapter I

Research Background

1.1. Introduction

Universities libraries have historically played a critical role in providing access to scholarly materials for members of the academic community, including faculty and students. However, this role is presently evolving due to the rapid advancements in internet technology. According to Chen (2018), these technological developments have caused a significant shift in the behavior of academics seeking information. In the past, physical visits to the library, consultation of card catalogs, and retrieval of physical materials were the norm (Tonta, 2008). However, since the 1990s, electronic journals and eBooks have become widely available on the internet, resulting in the transformation of the library from a physical place to an online resource. This evolution is particularly pertinent given the emergence of the net generation as the primary user of library resources.

Soroya and Ameen (2018) contend that the present behavior of library users poses a significant challenge, as they are increasingly disassociating themselves from the traditional concept of the library as a physical space. Kohl (2006) suggested that university libraries should not be viewed merely as a building on the campus grounds, but rather as repositories of valuable knowledge and information. The physical library's significance has decreased, especially with regards to its journal and print collections and government documents. In response to this

paradigm shift, libraries have been forced to evolve to maintain their relevance and continue to function as the intellectual heart and brain of the university. To achieve this, libraries have introduced online access to information, digital catalogs, virtual reference management systems, loan renewal options, and user training (Ramos, 2016). Moreover, libraries are now focusing on data exploration initiatives, community learning programs, and knowledge management implementations (Shen, 2019) to support these transformative efforts.

The researcher conducted extensive preliminary research to identify gaps in the understanding of library innovation. To begin, they gathered real-world examples of library innovation to support their argument. One such example is the Library Innovation Lab at Harvard Library (Harvard Library, 2021), which focuses on large multi-year projects as well as smaller initiatives aimed at improving libraries. For instance, the Caselaw Access Project aims to make all US case law accessible for free, while Alterspace enables visitors to adjust lighting, color, sound, and space within the library. Oxford Library (Oxford Library, 2021) has collaborated with Biblioteca Apostolica Vaticana from the Vatican on the Polonsky Foundation Digitization Project, which aims to digitize ancient texts. Another example is the University of British Columbia in Canada (University of British Columbia, 2021), which offers four primary innovation services to users, including planning research (which includes library skills, assignment calculators, research commons, etc.), a resources center (featuring books, journal articles, sound recordings, videos, data, and statistics, etc.), evaluation and citation services (including citation management), and research publishing (focusing on building

academic profiles, research data management, citation metrics, etc.). The University of Sydney in Australia is another prominent example of library innovation, where the library is creating a technology space known as ThinkSpace and CreateSpace, which offers users the opportunity to learn about 3D printing, robotic coding, virtual reality, and more (The University of Sydney, 2021).

The researcher also collects information on library innovation in Indonesia. The results show that Universitas Indonesia implements programs to support the research ecosystem, utilize information technology, and improve librarians' leadership capabilities to serve the needs of their users (Ayu, 2020). Airlangga University (2017) also highlights the revolution of libraries, including collection-centric, user-centric, and digital shift. The implementation of virtual tours based on Virtual Reality (VR) Augmented Reality for Library (ARLib) can be seen in Universitas Lampung (Novi, 2019). Universitas Katolik Widya Mandala (2019) provides a New Online Library Service which includes similarity check, e-acquisition, e-circulation, verification of repository, searching for information, and searching for e-journal. E-resources can also be accessed in Universitas Pendidikan Indonesia (Wulandari, 2020). Meanwhile, Institut Teknologi Bandung progressed to be a center of the collection, plagiarism check, and reference citation management (Permana, 2020). All these innovative products show thoughtful efforts by academic libraries to be more innovative in managing their organizations.
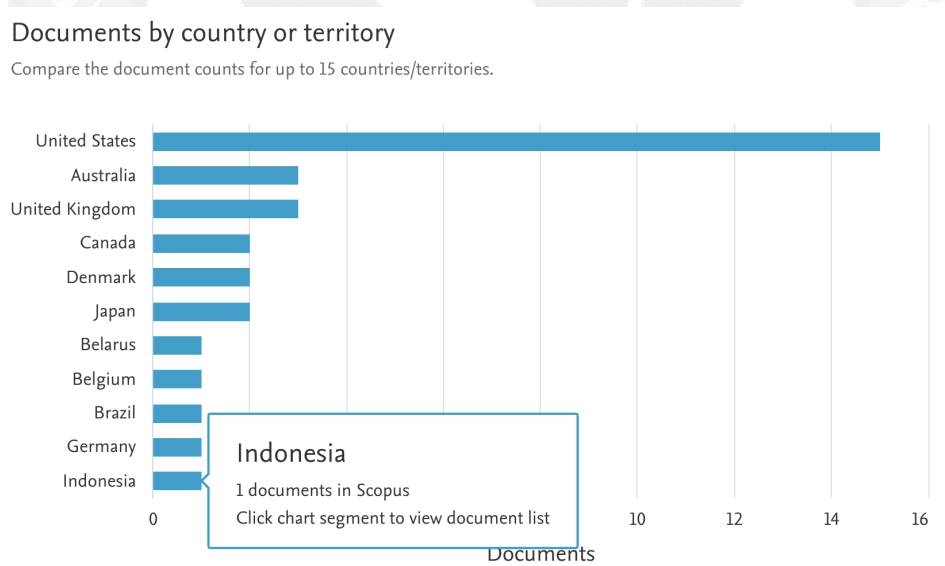
In addition to conducting web searches, the researcher conducted an extensive literature review by examining Scopus indexed publications from the year 2000 to 2022 using the keyword "innovation in the library".

Figure 1. Scopus indexed publications related to innovation in library

Documents by year
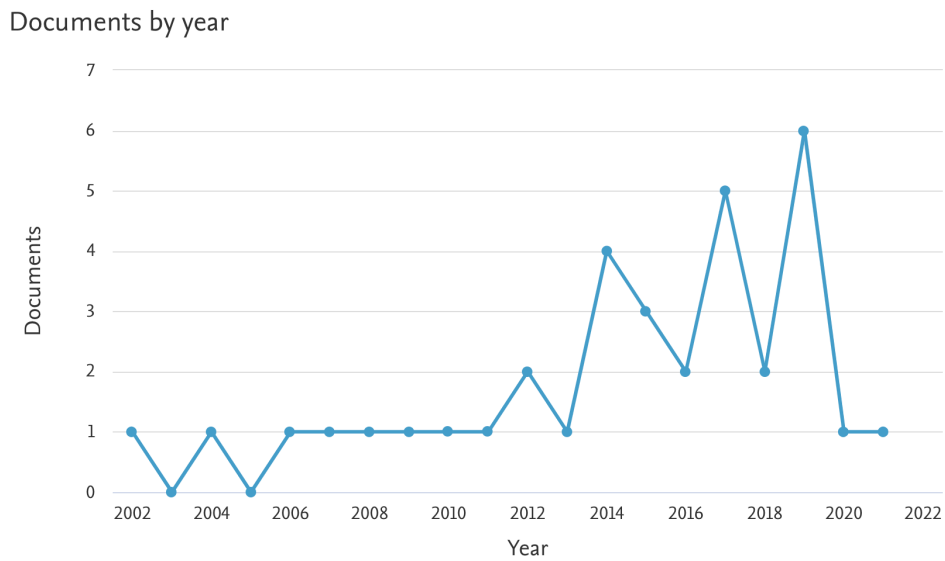
Source: Scopus (2022)-data retrieved on 1 June 2022

Figure 2. Scopus indexed publications related to innovation in library by country

Documents by country or territory

Compare the document counts for up to 15 countries/territories.

Indonesia

1 documents in Scopus

Click chart segment to view document list

Source: Scopus (2022)-data retrieved on 1 June 2022

In addition to the quantitative data, the author also conducted a detailed examination of research articles. The author presents the information by providing the title of the article, the authors, the year it was published, the research background, methods used, research outcomes, and context. Finally, the author summarizes the findings based on the phase of innovation they represent, and the evidence is presented in Table 1 in the appendix.

The analysis presented in this study leads to three main conclusions. Firstly, research on library innovation can be categorized into antecedents, processes, and tools for promoting innovation. Antecedents refer to factors that contribute to the initiation of conversations about library innovation, such as dynamic leadership and vision, as identified in Hart's (2006) research. Prior to executing an innovation strategy, it is also important to acquire knowledge and understanding of relevant innovation strategies, such as marketing-related innovation, as suggested by Robinson (2012). Moreover, Namachchivaya (2012) argues that the use of various forms of the internet, particularly for digital libraries, is crucial for libraries to advance their innovation practices.

Secondly, the analysis reveals that the research on library innovation largely focuses on the processes involved in creating innovation output. The identified processes include the necessary timing and progress required for innovation success (Woodard and Hinchliffe, 2002), collaboration with faculty and other stakeholders (Baker, 2007), incorporating technology and human support (Ferreiro and Muga, 2008), use of more mature technology (Cervone, 2011), leading by example by library leaders (Walton and Webb, 2016), and utilization of data and knowledge

management (Shen, 2019), among others. These processes are the primary theme underlying library innovation research, and the analysis identified 21 such studies.

Lastly, the analysis demonstrates the tools required for library innovation. For example, Zhixiong et al. (2007) show that users require tools for extracting relevant data for their research. Peng et al. (2010) illustrate the development of a chemical-related database tool to support library services. Cook and Hurst (2013) demonstrate the effectiveness of handheld devices available in libraries to promote innovation. Gisolfi (2019) highlights the significance of library building innovation in providing a unique user experience. Lee (2020) presents patented tools as sources of library innovation.

Unfortunately, only one article included in the analysis pertained to Indonesia's context and focused on users' responses to innovation rather than the country's capacity for innovation. Consequently, the researcher conducted preliminary research by conducting interviews with high-ranking librarians from seven prominent universities in Indonesia to gain a better contextual understanding of how libraries in Indonesia practice innovation. The purpose of the interviews was to explore innovation in Indonesia's libraries. The researcher chose seven prominent universities in Indonesia, including Universitas Indonesia (UI), Universitas Gadjah Mada (UGM), Universitas Airlangga (UNAIR), Universitas Diponegoro (UNDIP), Universitas Islam Indonesia UII), Telkom University (TelU), and Universitas Kristen Petra (UK Petra). The interviews followed a structured format in which the researcher pre-determined the interview questions.

The exploration of how these libraries conduct their innovation practices is available in Tables 2 and 3 in the appendix section.

The preliminary interviews yielded several results. Initially, all the librarians stated that their libraries had several innovation projects, ranging from small to large-scale initiatives. These projects primarily focused on digitalization and information technology to enhance the library's services, such as implementing online book borrowing, digital collection catalogs, remote access, library integration systems, and introducing new physical spaces, such as co-working spaces and museums within the library. UK Petra library emphasized the importance of libraries becoming community hubs for both internal and external parties, enabling them to learn from each other. Libraries consider innovation crucial since they have to cope with three main factors, such as fulfilling users' changing requirements, adapting to changes in education, research, and community development sectors, and supporting the university's overall performance. Due to these innovative projects, all the libraries received 'A' as their accreditation from the national library of Indonesia, and some librarians also received awards from various innovation competitions, both locally and nationally.

The librarians interviewed stated that innovation can originate from either top management or staff, with the latter becoming real innovation. According to the UGM informant, a top-down approach is better for successful innovation since bottom-up approaches usually stem from librarians' desires to win awards rather than addressing users' needs. The UII librarian gave an example of a top-down approach, where the vice-rector requested the library to create and manage

academic journals. Additionally, an informant from UI noted that national policies also play a significant role in determining the library's innovation projects.

To ensure the success of innovation in libraries, the interviews revealed several answers. One of them is the need for support from individuals outside of libraries. Due to the significant challenge in information technology, librarians require support from IT personnel from the university or external parties as they may lack the necessary skills such as programming. Moreover, innovation projects must be continuously monitored and evaluated. The UNDIP informant highlighted the need for consistency if innovation projects are to be successful. Furthermore, support from the university's leadership, including budgetary requirements, is necessary. According to the UI informant, innovation projects should be continued even after they are completed and transformed into routine tasks for managing and developing these projects. Additionally, the UII's Head of Library emphasized the importance of wholeheartedly conducting innovation.

Various training programs and financial support are being used to reinforce innovation practices and enhance the hard and soft skills of library researchers. Additionally, new librarians with information technology, digital library-related skills, and project management expertise are being recruited. However, several challenges persist in cultivating an innovative culture within libraries. Chief among these challenges is the management of collaborative projects, particularly with the university's IT department and external stakeholders. Librarians at UNAIR and UNDIP cited the extended waiting time for the initiation of innovation projects, which can hinder progress. A lack of leadership from the IT department was also

cited as a potential obstacle to innovation projects by UNDIP's librarian. Moreover, competing priorities and bureaucracy issues can further delay the progress of innovation projects, as noted by UK Petra's librarian.

Innovative practices within library units often entail collaborations with external parties, thereby giving rise to challenges in project management. One such challenge pertains to sustaining innovation projects beyond the attainment of initial milestones. The question of who will continue to drive project development, given limited resources and expertise, looms large as a pressing issue for libraries. Despite the presence of internal IT personnel, many innovation projects cannot be undertaken by libraries alone, due to institutional regulations and the sheer scale of the project at hand. Inadequate staff numbers and skillsets in dealing with library technologies also pose significant challenges. As an example, a librarian from UI mentioned that libraries will always have to develop their technical skills mainly in managing the ever-evolving online database and tools. Support from the university can also be challenging due to the impact of policies on innovation practices.

The inquiry was also made regarding the association between libraries and research offices, to examine the level of collaboration between these units. Regrettably, according to most librarians, their relationship with the research office is not sufficiently strong. A librarian from UGM underscored that the library should support research and publication activities by the research office, and thus there should be a more robust collaboration between the two units. The library at TelU disclosed that they rarely collaborate with the research office due to the disparity in their structures. Conversely, a librarian from UNAIR noted that the library and

research office have an excellent partnership in managing academic publications. UII's librarian mentioned that the research office and library are jointly managing academic journals.

In accordance with the National Library of Indonesia's regulation (P. N. R., 2018), the libraries surveyed for the study followed the principles of innovation in order to achieve an 'A' rank, the highest ranking for a library in Indonesia. The required elements for higher education institutions to achieve this ranking include library collection, equipment, services, human resources quality, library management, and complementary services. Under complementary services, there are six important points, including innovation, uniqueness of the library, librarians' achievements, university leadership commitment to support libraries, collaboration with faculties and other academic communities to develop the library, and survey-based evaluations of the library's impact on academic achievements, particularly on research. The innovation element specifically focuses on the number of innovations created by librarians in areas such as collection, library management, services, collaboration with faculty and students, IT development, and others. Although innovation is a specific element, it is still a part of other aspects of this accreditation system, such as the element of online access to library resources in the library service indicators, which requires collaboration with IT to create digital access or a digital library.

The positive aspect of conducting both secondary and primary research is that academic libraries possess the ability to innovate, despite encountering difficulties in different areas. The recognition and awards received by the libraries

for their innovative outputs and outcomes serve as evidence of their success. Librarians acknowledge the importance of having support and strategies to foster innovation, and they emphasized that innovation is already ingrained in their culture. They also receive encouragement and training to enhance their innovation practices, which collectively contributes to what is known as innovation capability in the field of innovation.

Innovation capability refers to an organization's ability to innovate and thereby enhance their chances of survival and success in a competitive market. According to Kanchanabha and Badir (2021), organizations can enhance their innovation capability by effectively managing their internal resources, which can provide them with a competitive edge. This concept is based on the Resource-Based View (RBV) of the firm, which suggests that firms that are capable of recognizing and managing their resources effectively are more likely to generate high profits (Wernenfelt, 1984).

Researchers from different contexts have studied innovation capability, which refers to an organization's ability to innovate and gain a competitive advantage. A comprehensive analysis of Scopus publications related to innovation capability was conducted to gain a better understanding of the concept. The analysis, presented in table 4 and 5 in the appendix, includes two sets of data based on the highest number of citations and the newest research, respectively. The analysis of 50 studies in each set reveals three main conclusions. Firstly, most studies on innovation capability focus on the factors that determine its success and the consequences of being innovative, as well as the relationship between the two.

Secondly, quantitative research methods dominate the literature, while qualitative approaches are underrepresented. Lastly, most studies focus on innovation capability in profit-oriented companies, with only one study in the higher education context. This finding is particularly noteworthy because the definition and purpose of innovation capability are not exclusively focused on commercial gain. Non-profit perspectives are not well represented in the literature.

Based on extensive preliminary research, the researcher has identified several gaps in the current literature regarding innovation in libraries. Firstly, only two studies from Indonesia have been conducted on this topic, highlighting a significant gap in contextual understanding. Secondly, there is a lack of research on innovation in libraries and their innovation capability, especially from the library's perspective. Finally, the researcher has identified a theoretical gap in the literature, as innovation capability has predominantly been studied in profit-oriented organizations, with very little attention paid to the non-profit sector, including libraries.

The purpose of this research is to develop a theory for innovation capability from a non-profit perspective, specifically in libraries of state-owned higher education institutions. The selection of state-owned higher education institutions is due to their focus on educational and societal development rather than market and profit perspectives, as outlined in section 5 of Indonesia's statute on higher education (Undang-Undang Republik Indonesia Nomor 12 Tahun 2012 Tentang Pendidikan Tinggi). Furthermore, section 65 of the statute indicates that the government will support the budgetary needs of state-owned higher education

institutions. In contrast, private-owned higher education institutions have financial autonomy without government support, as stated in section 22 of Indonesia's statute on higher education management (PP No 4 Tahun 2014). The research methodology employed is grounded theory research.

The significance of this study is attributed to the absence of adequate understanding of the concept of innovation capability, which could result in failing to achieve innovation success through its management. As per Chen et al. (2018), innovation endeavors are usually precarious and have a high likelihood of failure. Therefore, lacking a comprehensive understanding of innovation capability from the library's viewpoint would expand the gap to innovation success. Moreover, although librarians create and manage innovation, little literature supports their efforts. This urgency is amplified in the Indonesian context, as there is insufficient empirical learning available.

1.2. Research Questions

Founded on the in-depth explanation above, three questions for this study are:

1. How do SOHEI libraries in Indonesia build innovation capability in a dynamic environment?

2. How do SOHEI libraries leaders in Indonesia lead their organizations to develop innovation capability?

3. How do SOHEI libraries utilize their innovation capabilities to cope with users' needs?

1.3. Research Objective

The primary aim of this study is to establish a novel theory regarding innovation capability, with a focus on facilitating innovation practices in academic libraries in Indonesia. Additionally, the research will provide insights into the current state of innovation capability development in SOHEI libraries within Indonesia. Furthermore, the study will introduce a new variable, which adds novelty to the research. Finally, the definition of innovation capability from the specific context of this research will be presented. These efforts will culminate in the formulation of future hypotheses derived from a deconstructed theory.

1.4. Research Significances

The significance of highlighting the views of librarians can be crucial for numerous reasons. Firstly, from a contextual point of view, lack of understanding leads to a higher chance of failure in managing and leading innovation thus comprehensive study is required. Secondly, from a research point of view, it adds a new perspective on innovation capability research from a non-profit perspective. Lastly, from a theoretical point of view, the research result can propose a new understanding of innovation capability from a unique angle.