PAPER – OPEN ACCESS

Supporting and Inhibiting Factors for Students in Utilizing Library Services and Facilities in the Digital Era

Supporting and Inhibiting Factors for Students in Utilizing Library Services and Facilities in the Digital Era

Jeihan Nabila[a]*, Desriyeni[a], Muhammad Teguh Brillian[b]

[a]Department of Information Science and Library, Faculty of Languages and Arts, Universitas Negeri Padang
[b]Faculty Science of Technology, Imam Bonjol State Islamic University, Padang

jeihan@fbs.unp.ac.id, desriyeni@fbs.unp.ac.id, m.teguh.b@uinib.ac.id

Abstract

This research aims to uncover the supporting and inhibiting factors influencing students' decisions to utilize university library services and facilities in the digital era. By adopting an approach that encompasses technological, social, cultural, and comfort aspects, this study delves into students' perceptions and preferences regarding the library as a heterotopia—a distinct space characterized by unique attributes that differentiate it from everyday spaces. Through in-depth interviews with students, findings indicate that the availability of relevant learning materials and references plays a crucial role in motivating students to engage with library services. Facilities such as comfortable reading spaces and high-speed internet connections were also found to contribute to a conducive learning experience. However, encountered challenges, such as the lack of spaces for discussions and unfamiliarity with digital library services, have the potential to diminish students' interest in utilizing these facilities. Apart from investigating supportive and inhibiting factors, this research also explores the concept of the library as a heterotopia. While libraries are perceived as spaces that offer alternative experiences and room for knowledge exploration, the findings highlight that the spatial design does not fully reflect the concept of heterotopia. Consequently, this study emphasizes the need for enhancing library space design to stimulate exploration and interaction, as well as a more proactive approach to promoting digital library services to students. The implications of these findings encompass the development of a more inclusive and dynamic learning environment in the continuously evolving digital era.

Keywords: University library; utilization of services; supporting factors; inhibiting factors; heterotopia; digital era

Abstrak

Penelitian ini bertujuan untuk mengungkap faktor-faktor pendukung dan penghambat yang memengaruhi keputusan mahasiswa dalam memanfaatkan layanan dan fasilitas perpustakaan universitas pada era digital. Dengan mengadopsi pendekatan yang mencakup aspek teknologi, sosial, budaya, dan kenyamanan, penelitian ini menelusuri persepsi dan preferensi mahasiswa terkait perpustakaan sebagai heterotopia—sebuah ruang yang berbeda dengan atribut unik yang membedakannya dari ruang sehari-hari. Melalui wawancara mendalam dengan mahasiswa, temuan menunjukkan bahwa ketersediaan materi dan referensi belajar yang relevan memainkan peran krusial dalam memotivasi mahasiswa untuk berinteraksi dengan layanan perpustakaan. Fasilitas seperti ruang baca yang nyaman dan koneksi internet berkecepatan tinggi juga terbukti berkontribusi pada pengalaman belajar yang kondusif. Namun, tantangan yang dihadapi, seperti kurangnya ruang untuk diskusi dan ketidakfahaman terhadap layanan perpustakaan digital, berpotensi mengurangi minat mahasiswa untuk memanfaatkan fasilitas tersebut. Selain menyelidiki faktor pendukung dan penghambat, penelitian ini juga menjelajahi konsep perpustakaan sebagai heterotopia. Meskipun perpustakaan dianggap sebagai ruang yang menawarkan pengalaman alternatif dan ruang untuk eksplorasi pengetahuan, temuan menunjukkan bahwa desain spasial tidak sepenuhnya mencerminkan konsep heterotopia. Oleh karena itu, penelitian ini menekankan perlunya meningkatkan desain ruang perpustakaan untuk merangsang eksplorasi dan interaksi, serta pendekatan yang lebih proaktif dalam mempromosikan layanan perpustakaan digital kepada mahasiswa. Implikasi dari temuan ini melibatkan pengembangan lingkungan belajar yang lebih inklusif dan dinamis dalam era digital yang terus berkembang.

Kata kunci: Perpustakaan universitas; pemanfaatan layanan; faktor pendukung; faktor penghambat; heterotopia; era digital

1. Introduction

The advancement of technology has transformed the way students seek information to support their academic activities. Apart from utilizing library services and facilities, the use of the internet and personal devices has become a more appealing choice for students [1][2]. Furthermore, the COVID-19 pandemic has disrupted the educational landscape, compelling students to adapt to changes in utilizing library services and facilities [3][4].

In this context, the endeavor to create an optimal environment within the library, capable of providing unimpeded services, presents a significant challenge [5]. However, reality indicates that several students at Universitas Negeri Padang (UNP) prefer to use the internet to access information for their academic endeavors. This inclination is driven by the ease and swiftness of accessing the required information through personal devices, alongside factors about infrastructure offered by the library.

Numerous studies have proposed solutions to address these challenges, such as enriching reference sources, improving internet access quality, enhancing information literacy training, and expanding online library services [3][5][6]. Nevertheless, limitations within these solutions need to be acknowledged. For example, not all students have adequate internet access, nor do all possess proficient information literacy skills.

Moreover, while several studies have investigated library utilization from the technological aspect, there is a scarcity of comprehensive research addressing the multifaceted factors that encourage or hinder students in utilizing library services for learning purposes in the digital era. Furthermore, considering diverse social and cultural aspects, the factors supporting and hindering library utilization can vary across different contexts. The existing gap between conditions and prior research raises the question posed by this study: "What are the supporting and inhibiting factors influencing UNP students' utilization of library services and facilities in the digital era?"

The advancement of technology and the impact of the COVID-19 pandemic have driven the transformation and integration of digital media in various realms, including academic library services. The Internet and search engines enable students to obtain instant information without the need to physically visit the library. The extensive restrictions during the COVID-19 pandemic have significantly impacted library visits. These two conditions collectively pose challenges to libraries in providing beneficial services to the community in the digital era and the post-COVID-19 period.

In response to these circumstances, libraries have been continuously adopting the latest technological advancements to remain relevant and effective in offering services and informational resources [7]. Various technologies are being implemented by libraries, including bibliography citation management systems, instructional design systems, electronic copyright management systems, classroom space management systems, library automation systems, electronic resource management systems, integrated search systems, recommendation systems, gamification, localization technology, mobile technology, and the use of RFID [8]-[9]. The integration of these technologies assists libraries in enhancing performance, security, and user experience.

The utilization of technology and the development of services by libraries have demonstrated positive impacts in addressing the challenges posed by COVID-19 and its aftermath. Numerous studies indicate that despite the drastic decline in physical library visits due to the COVID-19 pandemic, the utilization of digital information sources, virtual services, and consultations have increased [10] - [11]. Some libraries have responded to the pandemic by enhancing access to and promotion of digital content, while observing user access patterns to improve their services [12][10][13][14]. Furthermore, social media has proven to be an effective channel for promoting library services during the pandemic [15]. This transformation is seen as an essential component of library strategies to maintain a sense of proximity to library services among users [16].

Moreover, specifically, the research delves into the inquiry of what supporting and inhibiting factors influence students' utilization of library services and facilities. Literature review indicates a limited amount of research on this specific inquiry. Several factors affecting students' use of the library include the professionalism of library staff, the comprehensiveness of library services, library collections, computers, internet connectivity, the availability of desks and chairs, lockers, cleanliness, lighting, provision of information and guidance, electrical outlets, room temperature regulation, and spatial arrangements that facilitate social interaction [17], [18], [19] - [20].

Furthermore, various studies also point out potential barriers. The absence or inadequacy of the aforementioned supporting factors can discourage students from utilizing the library [21][22][23]. Additionally, other factors contributing to students' reluctance to utilize the library include unfamiliarity with library services, distant or difficult access to the library, availability of alternative information sources outside the library [23], and the experience of library anxiety [24].

1.1. The Library as Heterotopia

In the context of heterotopia, the library is seen as a space that serves not only as a place for reading, borrowing reading materials, or conducting research, but also as a space that fosters continuous experiences, joy, surprises, and discoveries [25]. This perspective can help alleviate the fear or anxiety an individual might feel when visiting the library (library anxiety) and introduce the concept of the library as an engaging and enjoyable space for exploration and enjoyment [26].

Findings from these studies reveal several factors influencing students' library usage, both as supporting and inhibiting factors. Various motivational theories can be applied to examine these factors. One relevant motivational theory is Self-Determination Theory, which posits that individuals have fundamental needs for autonomy, competence, and social connection [27]. In the context of library usage, students may be motivated to utilize the library if they feel a sense of control and autonomy in their learning process (autonomy), feel capable of accessing the resources they need (competence), and feel connected to peers or relevant information sources (social connection).

Another relevant motivational theory is Expectancy Theory. This theory states that individuals are motivated to take specific actions if they believe that those actions will lead to desired outcomes they have the capability to achieve those outcomes [27]. In the context of library usage, students may be motivated to use the library if they believe that the library can provide the resources they need (desired outcome) they feel capable of using those resources (capability to achieve the outcome) [28].

Maslow's Hierarchy of Needs theory can also aid in understanding the driving and inhibiting factors for students' library utilization. This hierarchy theory suggests that humans have a hierarchy of needs that must be fulfilled for self-actualization to occur [29]. Illustrated as a pyramid with five levels, it starts with physiological needs at the base, followed by safety, love/belonging, esteem, and self-actualization at the top. Primary needs like physiological and safety requirements must be met first before students can focus on utilizing the resources available in the library. Social needs like a sense of belonging or feeling valued can also impact students' motivation to use the library. Additionally, students motivated to achieve academic success can utilize the library to meet their self-actualization needs. When facing barriers, the library can address students' primary profoundly and social needs and enhance service quality to boost motivation and willingness to use library resources.

These studies have identified various factors that can act as motivators or barriers for students' library utilization and can be viewed through the lens of different motivational theories. However, explicit research on the supporting and inhibiting factors for post-COVID-19 library utilization remains limited. Furthermore, studies regarding the concept of the library as heterotopia are also scarce. Therefore, this research is expected to complement the existing scholarly gap and serve as a reference for libraries to enhance their services and facilities.

2. Method

The primary goal of this study is to profoundly investigate the factors that play a role in supporting and hindering students' utilization of library services in the digital era. The foundational theory that guides the research questions is Maslow's Hierarchy of Needs, which offers insights into the hierarchy of needs that might influence students' motivation to use the library. The study involves students from Universitas Negeri Padang as research participants, utilizing a post-positivist paradigm.

In the effort to gain deeper understanding, a qualitative approach is adopted in this study, with interviews serving as the primary data collection technique. Data collected from the interviews was transcribed into a written format and analyzed using thematic analysis. This approach facilitated the identification and categorization of thematic patterns that emerged from the interview data. The interview and analysis process continued until saturation was achieved, signifying that no significant new information emerged from subsequent interviews.

In the conclusion phase, the interview data analysis was compared with relevant theories and prior research findings. Additionally, patterns and trends identified from the data were highlighted, allowing for the formulation of robust conclusions based on critical findings. As a result, this study aimed not only to address the research questions posed but also to provide in-depth insights into the factors influencing students' utilization of library resources in the digital era.

3. Result and Discussion

The COVID-19 pandemic has acted as a primary driver in reshaping educational paradigms and the use of technology in university environments. These changes have also affected students' learning patterns and their utilization of library services. This study aims to uncover the supporting and hindering factors influencingrelated students' decisions to utilize university library services and facilities in the digital era. The research focuses on technological, social, cultural, and comfort aspects that shape students' perceptions and choices about library usage.

3.1. Factors Supporting Library Service Utilization

Interview findings from students reveal several factors supporting library utilization. The availability of diverse and relevant reference materials for academic tasks is a primary motivator. Students express that the collection of books, journals, and other accessible resources in the library significantly contribute to their academic assignments and research projects. The presence of amenities like comfortable reading spaces, coupled with air conditioning (AC), also plays a crucial role in creating a conducive learning environment, especially in hot weather conditions.

The presence of high-speed internet connectivity (Wi-Fi) emerges as a vital factor supporting library usage. Students acknowledge the benefits of fast internet access, enabling efficient reference searches and access to digital information resources. This underscores the significance of connectivity in meeting the demand for online information and services access.

At the level of physiological needs, factors such as the availability of relevant reference materials and a comfortable learning environment with AC play a role as fundamental necessities that must be met. Students experience comfort and the fulfillment of their subject matter needs through the library's resource collection. The availability of conducive and comfortable study spaces establishes an environment that ensures physical comfort and safety, both of which are essential factors for achieving good academic outcomes.

At the level of social needs, the availability of high-speed internet connectivity (Wi-Fi) is crucial in connecting students to digital information resources. Fast internet access enables students to efficiently conduct reference searches and access online resources without hindrance. The speed and quality of internet access contribute to fulfilling the social need for connection to the outside world and broader information resources.

Hence, this analysis indicates that the factors supporting students' library utilization in the digital era can be interpreted as efforts to meet physiological and social needs within Maslow's Hierarchy. The availability of relevant information resources and a conducive learning environment addresses primary needs, while the presence of fast internet access fulfills the needs for connection and further information access. Therefore, enhancing and adapting library facilities to this hierarchy can support more effective student utilization in the digital era.

3.2. *Factors Hindering Library Service Utilization*

While significant supporting factors exist, interviews also reveal several inhibiting factors that can decrease students' interest in utilizing the library. One such factor is the lack of dedicated spaces for discussion and collaboration. Students feel discomfort when they lack suitable spaces for group discussions or collaborative projects.

Additionally, some respondents state a lack of awareness regarding the digital services offered by the library. Students are not always aware that digital resources and services are available through the library. This highlights the need for raising awareness and understanding among students about these possibilities.

At the social needs level, the shortage of spaces designed for discussion and collaboration in the library can hinder students' ability to interact and work together. The absence of appropriate spaces for group discussions or collaborative projects can disrupt students' need for social connection and interaction that support their learning process. This factor suggests that the social interaction aspect and spaces for interaction are vital elements in creating a library environment that accommodates student needs.

At the level of esteem and self-actualization needs, a lack of awareness about the digital services offered by the library can influence students' interest in utilizing them. Students who are unaware of the potential and availability of digital resources through the library may perceive these services as irrelevant or unhelpful to them. Therefore, enhancing students' awareness and understanding of digital services can fulfill their esteem and self-actualization needs by providing broader access to information and services that enhance the quality of learning and research.

In this context, enhancing library facilities and services to support social interaction and increasing students' awareness of digital services can help address these inhibiting factors. By understanding how these factors relate to Maslow's hierarchy of needs, the library has the capacity to formulate more effective strategies aimed at increasing student interest and utilization in the digital era.

3.3. *Implications and Discussion: Heterotopia Aspects in the Library Experience*

The research findings shed light on various factors influencing students' utilization of library services and facilities in the digital era, with a particular focus on the concept of the library as heterotopia. The implications and discussions arising from these findings offer valuable insights for enhancing library experiences and addressing the challenges posed by the digital landscape.

The supporting factors identified in the study encompass the availability of diverse and relevant reference materials, a comfortable learning environment with amenities such as air conditioning, and high-speed internet connectivity. These factors align with Maslow's Hierarchy of Needs, emphasizing the fulfillment of physiological and social needs [29]. The provision of relevant information resources and conducive study spaces addresses primary needs, while fast internet access fulfills the social need for connection and broader information access.

Conversely, inhibiting factors were also revealed, including a lack of dedicated spaces for discussion and collaboration and insufficient awareness of digital services offered by the library. These hindering factors, when analyzed through the lens of Maslow's Hierarchy, point to challenges at the levels of social interaction and esteem/self-actualization needs [29]. The absence of spaces for collaborative work hampers social connections, while lack of awareness inhibits students from realizing the full potential of digital resources, affecting their esteem and self-actualization needs.

The concept of the library as heterotopia emerges as a critical theme, highlighting the library as a physical and social space that offers alternative experiences and an escape from the outside world's distractions [25]. However, the study also suggests that the current library design does not fully embody this concept. Library spaces, particularly reading areas, are perceived as rigid and lacking a compelling visual identity. The findings underscore the opportunity to redesign library spaces with more robust aesthetic considerations, creating an environment that not only supports learning but also challenges conventional concepts.[17][18]

In comparing these findings with existing literature and related studies, it becomes evident that the role of libraries as heterotopic spaces has been underexplored. While previous research has addressed factors influencing library utilization, the concept of heterotopia adds a nuanced perspective[25]. The discussion invites a reevaluation of library design and experiences in light of this concept, encouraging libraries to become dynamic spaces that inspire interaction, exploration, and responsiveness to evolving student needs in the digital era.

In conclusion, the implications drawn from this study call for a holistic approach to library development. By addressing the identified supporting and inhibiting factors, promoting digital services, and reimagining library spaces with a focus on the heterotopia concept, libraries can better cater to the diverse needs of students in the digital era. This discussion contributes to the scholarly discourse on library services, offering practical insights for libraries aiming to remain relevant and effective in an ever-evolving educational landscape.

Acknowledgments

References

[1] L. Silipigni Connaway and K. M. Randall, "Why the Internet is More Attractive than the Library," *Ser. Libr.*, vol. 64, no. 1–4, pp. 41–56, 2013, doi: 10.1080/0361526X.2013.761053.

[2] A. Brunskill and R. Hanneke, "Students who are non-users of their academic library: A scoping review," *J. Acad. Librariansh.*, vol. 47, no. 5, p. 102423, Sep. 2021, doi: 10.1016/J.ACALIB.2021.102423.

[3] Y. Kim and E. Yang, "Academic library spaces and student activities during the COVID-19 pandemic," *J. Acad. Librariansh.*, vol. 48, no. 4, p. 102529, Jul. 2022, doi: 10.1016/j.acalib.2022.102529.

[4] T. Makmur, "TEKNOLOGI INFORMASI," *Info Bibl. J. Perpust. dan Ilmu Inf.*, vol. 1, no. 1, pp. 65–74, Sep. 2019, doi: 10.24036/ib.v1i1.12.

[5] K. Martzoukou, "Academic libraries in COVID-19: a renewed mission for digital literacy," *Libr. Manag.*, vol. 42, no. 4/5, pp. 266–276, May 2021, doi: 10.1108/LM-09-2020-0131.

[6] B. Wales, "A comparison of two user groups: International and U.S. students in an academic library," *Public Access Serv. Q.*, vol. 2, no. 4, pp. 17–37, 1999, doi: 10.1300/J119v02n04_02.

[7] L. B. Ayre, "The Impact of Information Technology on Public Libraries," *Public Libr. Q.*, vol. 35, no. 4, pp. 355–361, Oct. 2016, doi: 10.1080/01616846.2016.1245009.

[8] H. Moruf and P. O. Olaojo, "Library Automation and the Training Needs of 21st Century Professionals: Trend and Challenges in Academic Library," *FUDMA J. Sci.*, vol. 3, no. 2, pp. 45–53, 2020, [Online]. Available: https://www.researchgate.net/publication/345630566_Library_Automation_and_the_Training_Needs_of_21st_Century_Professionals_Trend_and_Challenges_in_Academic_Library/stats.

[9] B. O. George, J. Maina, and L. W. Wanangeye, "Analyzing the Use of Mobile Phone Technology in Access and Utilization of Library Resources in Mount Kenya University, Kisii Campus," *World J. Comput. Appl. Technol.*, vol. 4, no. 1, pp. 15–21, May 2016, doi: 10.13189/wjcat.2016.040103.

[10] R. S. Connell, L. Wallis, and D. Comeaux, "The Impact of COVID-19 on the Use of Academic Library Resources," *Inf. Technol. Libr.*, vol. 40, no. 2, 2021, doi: 10.6017/ital.v40i2.12629.

[11] Y. Guo, Z. Yang, Z. Yang, Y. Q. Liu, A. Bielefield, and G. Tharp, "The provision of patron services in Chinese academic libraries responding to the COVID-19 pandemic," *Libr. Hi Tech*, vol. 39, no. 2, pp. 533–548, Jun. 2021, doi: 10.1108/LHT-04-2020-0098.

[12] S. De Groote and J. M. Scoulas, "Impact of COVID-19 on the use of the academic library," *Ref. Serv. Rev.*, vol. 49, no. 3/4, pp. 281–301, Dec. 2021, doi: 10.1108/RSR-07-2021-0043.

[13] J. Ćirić and A. Ćirić, "The Impact of the COVID-19 Pandemic on Digital Library Usage: A Public Library Case Study," *J. Web Librariansh.*, vol. 15, no. 2, pp. 53–68, Apr. 2021, doi: 10.1080/19322909.2021.1913465.

[14] P. Y. Yu, E. T. H. Lam, and D. K. W. Chiu, "Operation management of academic libraries in Hong Kong under COVID-19," *Libr. Hi Tech*, vol. 41, no. 1, pp. 108–129, Apr. 2023, doi: 10.1108/LHT-10-2021-0342.

[15] A. Koulouris, E. Vraimaki, and M. Koloniari, "COVID-19 and library social media use," *Ref. Serv. Rev.*, vol. 49, no. 1, pp. 19–38, May 2021, doi: 10.1108/RSR-06-2020-0044.

[16] J. M. Scoulas, "College students' perceptions on sense of belonging and inclusion at the academic library during COVID-19," *J. Acad. Librariansh.*, vol. 47, no. 6, p. 102460, Dec. 2021, doi: 10.1016/j.acalib.2021.102460.

[17] V. Lux, R. J. Snyder, and C. Boff, "Why Users Come to the Library: A Case Study of Library and Non-Library Units," *J. Acad. Librariansh.*, vol. 42, no. 2, pp. 109–117, Mar. 2016, doi: 10.1016/j.acalib.2016.01.004.

[18] L. M. Huang and I. Tahamtan, "Why do people come? The factors influencing public library visits," *Proc. Assoc. Inf. Sci. Technol.*, vol. 55, no. 1, pp. 832–833, 2018, doi: 10.1002/pra2.2018.14505501136.

[19] S. M. Dahan, M. Y. Taib, N. M. Zainudin, and F. Ismail, "Surveying Users' Perception of Academic Library Services Quality: A Case Study in Universiti Malaysia Pahang (UMP) Library," *J. Acad. Librariansh.*, vol. 42, no. 1, pp. 38–43, Jan. 2016, doi: 10.1016/j.acalib.2015.10.006.

[20] R. Palumbo, "The quest for attractiveness of publicly owned libraries: a service quality perspective," *TQM J.*, vol. 35, no. 3, pp. 654–672, Mar. 2023, doi: 10.1108/TQM-12-2021-0365.

[21] W. Lee *et al.*, "Academic Library Barriers: Case Study in Private University Library," *Int. J. Acad. Res. Bus. Soc. Sci.*, vol. 10, no. 11, Nov. 2020, doi: 10.6007/IJARBSS/v10-i11/8117.

[22] and R. S. M. B. Lock, Meghan Webb, Glenda Boyles, Le'Ron Byrd, John Champlin, "What's in it for me? Success, motivation, and gaps," *ZSR Library*, 2023. https://zsr.wfu.edu/about/administration/assessment/assessment-in-action/.

[23] H. D. Kayaoglu, İ. Üniversitesi, E. Fakültesi, B. Ve Belge, Y. Bölümü, and A. Dergisi, "Perceptions and Expectations of Public Library Users in Istanbul, Turthat: The Results of a Survey," *J. Inf. Doc. Stud.*, no. June, pp. 1–19, 2014, [Online]. Available: https://www.researchgate.net/publication/325360102.

[24] A. C. and S. P. C., "Library Anxiety," 2020, pp. 38–58.

[25] G. P. Radford, M. L. Radford, and J. Lingel, "The library as heterotopia: Michel Foucault and the experience of library space," *J. Doc.*, vol. 71, no. 4, pp. 733–751, Jul. 2015, doi: 10.1108/JD-01-2014-0006.

[26] K. Nieves-Whitmore, "The Relationship between Academic Library Design and Library Anxiety in Students," *portal Libr. Acad.*, vol. 21, no. 3, pp. 485–510, 2021, doi: 10.1353/pla.2021.0027.

[27] R. M. Ryan and E. L. Deci, "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being.," *Am. Psychol.*, vol. 55, no. 1, pp. 68–78, 2000, doi: 10.1037/0003-066X.55.1.68.

[28] K. Chopra, "Vroom's expectancy theory to motivate academic library users in India using grounded theory approach," *Glob. Knowledge, Mem. Commun.*, vol. 68, no. 4/5, pp. 300–322, Jul. 2019, doi: 10.1108/GKMC-09-2018-0079.

[29] A. H. Maslow, "A theory of human motivation.," *Psychol. Rev.*, vol. 50, no. 4, pp. 370–396, Jul. 1943, doi: 10.1037/h0054346.