



Analysis of library space comfort in supporting student well-being at Universitas Muhammadiyah Sumatera Utara

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Abstract

Background: Modern academic libraries no longer function solely as providers of academic information, but also as spaces that support students' comfort and well-being. This study analyses the spatial comfort of the Library of Universitas Muhammadiyah Sumatera Utara and its relationship with student well-being.

Purpose: The aim of this research is to evaluate the role of facilities and a sense of safety in creating spatial comfort, as well as to identify the challenges encountered.

Methods: This study employed a qualitative case study approach to analyse library space comfort and its relationship with students' well-being at the Universitas Muhammadiyah Sumatera Utara Library. Data were collected through in-depth interviews, observation, and documentation involving librarians and students who actively utilise the UMSU library. The analysis was conducted through data reduction, data display, and conclusion drawing, using Environmental Psychology theory and the Learning Commons concept as analytical lenses.

Results: The results indicate that physical aspects (lighting, noise, and layout) and psychological aspects (sense of safety) are the main determinants of spatial comfort, which contribute to reducing students' academic stress. The findings also show that comfortable library spaces improve students' concentration, emotional stability, and learning experiences.

Conclusions: In conclusion, libraries are no longer perceived merely as places for studying and discussion, but also as "healing spaces" that provide a calm atmosphere for generating new ideas and relaxing while reading. This study contributes to the discussion of human-centred academic library design by demonstrating that spatial comfort functions not only as physical support for learning activities, but also as a psychological mechanism that supports emotional regulation, stress recovery, and students' well-being within Indonesian higher education contexts.

Keywords:

Space comfort
Student's well-being
College library
Academic library users
Learning commons

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INTRODUCTION

Academic libraries are an essential part of the academic support system and serve to support students' learning, research, and knowledge development (Suresh et al., 2025) wellbeing, as a concept in academic libraries, is not very well defined and is poorly understood. The objective of this scoping review was to examine the role of academic libraries in student and community wellbeing, identify the various kinds of activities and initiatives that they carry out to address their wellbeing, and uncover gaps that might require further research. Methods: An extensive search was conducted in the Library Information Sciences Association (LISA). Along with the development of modern education, libraries are no longer viewed merely as places for accessing references, but also as flexible and user-centred learning spaces that provide comfort, tranquillity, and positive experiences for users. The increasing prevalence of academic pressure, stress, and anxiety among university students has made the availability of comfortable spaces within the campus environment increasingly important.

In recent years, student well-being has become an important issue in higher education institutions worldwide. University students frequently experience various academic and non-academic challenges, including academic workload, time management difficulties, financial concerns, and social adjustment issues. These challenges may affect not only academic performance but also psychological well-being. Consequently, higher education institutions are

increasingly expected to provide supportive environments that promote both learning and well-being. These conditions have encouraged higher education institutions to pay greater attention to learning environments that are capable of reducing academic stress and supporting students' psychological well-being.

Recent international studies have emphasised that academic libraries increasingly function as supportive environments that contribute not only to academic achievement but also to students' emotional resilience and mental well-being. Academic libraries are now viewed as holistic learning environments where students seek concentration, social interaction, emotional recovery, and psychological comfort amid academic pressures (Brewster & Cox, 2023). In this context, libraries are often utilised not only as places for studying, but also as "healing spaces" that support students' well-being. This perspective is closely related to restorative environment theory, which explains that supportive and calming environments may reduce mental fatigue and promote psychological restoration. Restorative learning environments are considered important in higher education settings because they may positively influence students' emotional well-being, concentration, and learning experiences (Peters & D'Penna, 2020). Expanding on this mechanism Zhu & Xie (2023) emphasise that such psychological restoration is effectively achieved when the surroundings are deliberately designed to be calm, comfortable, and inherently low-stress.

Theoretically, spatial comfort is closely related to Environmental Psychology.

According to Mehrabian & Russell (1974), physical factors such as layout, lighting, colour, and noise levels can influence individuals' emotions and behaviour. In addition, the concept of Learning Commons proposed by Bennett (2003) emphasises that modern libraries should function as collaborative spaces that support social interaction, rather than merely serving as storage spaces for collections.

Several previous studies have demonstrated that library interior design, facilities, and environmental conditions influence users' comfort and satisfaction. Studies conducted in various academic libraries indicate that factors such as lighting quality, spatial arrangement, noise control, and seating flexibility contribute positively to students' learning experiences and emotional comfort (DeFrain & Hong, 2020). Previous studies by Cantika et al. (2025) and Afrina et al., (2025) also found that library interior design and supporting facilities affect users' perceptions of comfort. Nevertheless, these studies predominantly focus on user satisfaction and physical design aspects rather than examining the broader relationship between spatial comfort and students' psychological well-being.

Previous studies on academic libraries have predominantly focused on user satisfaction, interior design, and the functional aspects of learning spaces. However, limited attention has been given to how library spatial comfort contributes to students' psychological well-being, emotional regulation, and stress recovery within higher education environments. In addition, studies discussing academic libraries as healing spaces remain relatively

underexplored, particularly within the context of Indonesian universities. Therefore, this study seeks to fill this gap by examining how physical and psychological dimensions of library space comfort contribute to students' well-being at the Universitas Muhammadiyah Sumatera Utara Library (Bladek, 2021).

Universitas Muhammadiyah Sumatera Utara Library is one of the academic facilities that is intensively utilised by students for various activities, such as studying, completing assignments, and engaging in discussions. Nevertheless, it is not yet fully understood how aspects of spatial comfort within this library contribute to users' well-being. Therefore, this study is important to conduct due to the lack of scientific studies specifically analyzing the contribution of spatial comfort in the UMSU Library to students' well-being, particularly within Indonesian higher education contexts. Previous library studies in Indonesia have predominantly focused on collection development, information services, and library management aspects (Mahesa et al., 2025), while discussions concerning spatial comfort and psychological well-being remain relatively underexplored. Despite its high level of use, the intensity of utilization has not been accompanied by in-depth academic studies examining how the quality of spatial comfort in the UMSU Library contributes to students' well-being.

This study aims to analyse the relationship between library spatial comfort and students' well-being at the Universitas Muhammadiyah Sumatera Utara Library. Specifically, this study addresses the following research questions: (1) how do physical and psychological aspects of

library spatial comfort influence students' well-being, and (2) what challenges are encountered in creating comfortable library spaces that support students' well-being? The findings of this study are expected to contribute theoretically to Environmental Psychology and Learning Commons studies within academic library contexts. Practically, this study may provide insights for developing more comfortable, user-centred, and well-being-oriented academic library spaces.

RESEARCH METHODS

This study employed a qualitative case study approach to analyse library space comfort and its relationship with students' well-being at the Universitas Muhammadiyah Sumatera Utara Library. A qualitative approach was selected because it enables researchers to gain an in-depth understanding of the experiences, perceptions, and subjective meanings perceived by users toward the library environment.

This research was conducted at the Library of Universitas Muhammadiyah Sumatera Utara. The research subjects consisted of librarians and active UMSU students who utilised the UMSU Library

as a learning space (Table 1). Informants were selected using a purposive sampling technique based on specific criteria, namely librarians who possessed an understanding of library space management and services, as well as students who actively used the library facilities. Active students were defined as students who visited the library at least three times per week for academic activities. The informants in this study consisted of three librarians and four active students of Universitas Muhammadiyah Sumatera Utara who frequently utilised the library facilities for academic activities. The selection of informants was based on the intensity of library use and their understanding of library services and spatial conditions. The number of informants was determined until data saturation was achieved, namely when no substantially new themes or perspectives emerged from subsequent interviews.

Data collection was conducted through in-depth interviews, observation, and documentation. Semi-structured interviews were carried out to explore informants' perceptions of library space comfort and its influence on well-being. Observation was conducted to identify the physical conditions of the space,

Table 1. Informants' data

No.	Name Initial	Profession	Initial in Article
1.	NH	Librarian	Informant 1
2.	UN	Librarian	Informant 2
3.	AP	Librarian	Informant 3
4.	DL	Student	Informant 4
5.	NB	Student	Informant 5
6.	MS	Student	Informant 6
7.	EN	Student	Informant 7

Source: Research Data, 2026

including layout, lighting, noise levels, and users' patterns of space utilization. Documentation was used as supporting data in the form of photographs, policy documents, and information related to library facilities. Each interview lasted approximately 30–45 minutes and was conducted directly within the library environment to capture participants' contextual experiences. Interviews were audio-recorded with participants' consent and subsequently transcribed for analysis. The interview questions focused on participants' perceptions of physical comfort, psychological comfort, spatial limitations, and the role of the library in supporting their well-being.

Data analysis was conducted through three stages, namely data reduction, data presentation, and conclusion drawing. Data reduction was carried out by selecting and focusing the data in accordance with the research objectives. Data presentation was performed in the form of a systematic narrative description to clarify the relationships among the findings. Subsequently, conclusion drawing was conducted through an interpretative process, in which research findings were summarised based on patterns, relationships, and meanings emerging from the collected data.

The analysis process also involved thematic coding to identify recurring patterns and meanings emerging from participants' experiences. The collected data were categorized into several major themes, including physical comfort, psychological comfort, learning flexibility, spatial constraints, and emotional well-being. This thematic approach enabled a

deeper interpretative understanding of the relationship between library space comfort and students' well-being.

Data validity in this study was ensured through source and method triangulation, namely by comparing data obtained from various informants and from different data collection techniques. In addition, member checking was conducted to ensure the conformity between the collected data and the meanings intended by the informants, thereby enhancing the credibility of the research findings. The researcher acted as a non-participant observer during data collection and attempted to minimize personal bias by maintaining reflective field notes throughout the research process. This approach was applied to enhance reflexivity and maintain the credibility of the interpretation process.

RESULTS AND DISCUSSION

The spatial comfort of the Library of Universitas Muhammadiyah Sumatera Utara is analysed through two main dimensions, namely physical and psychological aspects. These two aspects are interrelated and simultaneously influence students' well-being. This analysis considers the perspectives of librarians as library managers as well as students as active users of the UMSU Library.

Spatial Comfort from the Physical Aspect

The Library of Universitas Muhammadiyah Sumatera Utara is designed not only as a storage place for collections, but also as a space that supports students' learning comfort, ease of access, and

inspiration for developing their knowledge. As an important institution in the field of education, the library must be able to meet readers' needs by providing an environment that supports various academic activities, such as reading, discussion, research, and the use of available technological facilities. In this regard, spatial comfort in the library is highly important because, in addition to functioning as an aesthetic component, it also plays a role in creating a productive, comfortable, and inclusive space (Cantika et al., 2025).

From the perspective of Environmental Psychology, physical spatial conditions such as lighting, layout, temperature, cleanliness, and noise levels significantly influence individuals' emotional responses and behaviour (Mehrabian & Russell, 1974). The findings indicate that, in general, the physical conditions of the Universitas Muhammadiyah Sumatera Utara Library have met the basic indicators of spatial comfort. Based on interviews with library staff, the following statement was obtained:

“Space management is carried out through a systematic arrangement supported by adequate facilities, such as discussion rooms with glass-based designs, computer and digital service rooms, study desks, reading areas available in every corner, as well as the provision of informal seating (floor seating areas), along with the maintenance of environmental cleanliness.” (Informant 1. Interviewed, April 9, 2026).

Observation findings support this condition, showing that the library space is well-organized, has adequate lighting, and is supported by facilities such as air conditioning, study desks, and varied reading areas. From the users' perspective,

students feel that a comfortable environment with available facilities is able to enhance their learning concentration. This is as expressed by an active student of Universitas Muhammadiyah Sumatera Utara:

“The atmosphere in the library helps improve learning focus, because the safer and more comfortable the environment is, the greater the concentration in learning.” (Informant 4. Interviewed, April 9, 2026).

This statement indicates that physical environmental conditions have an influence on students' learning concentration. This is consistent with the theory proposed by Vischer (2008), which emphasises that the quality of spatial environments contributes to psychological comfort and user performance in work or learning spaces.

These findings demonstrate alignment between space management efforts carried out by librarians and users' perceptions, thereby creating an effective learning environment. The availability of facilities such as computers, reading rooms, ergonomic seating, and informal seating areas provides flexibility in choosing a study space according to their needs. The relatively quiet atmosphere and clean environment also enhance comfort during learning activities.

These findings indicate that students' perceptions of comfort are influenced not only by the availability of physical facilities but also by the emotional atmosphere created within the library environment. The combination of spatial order, environmental calmness, and flexibility of learning spaces contributes to a stronger sense of control and psychological stability

during academic activities. This suggests that spatial comfort should be understood as an experiential and emotional condition rather than merely a physical attribute of the environment (Temple, 2019).

The findings also demonstrate that students value spatial flexibility as an important part of their learning experience. The availability of diverse study settings enables users to select environments that match different academic activities, ranging from individual study to collaborative discussions. Such flexibility is increasingly recognised as an essential characteristic of contemporary academic libraries because it accommodates diverse learning preferences and encourages active engagement with learning resources. Research on learning environments has shown that students tend to spend more time in spaces that provide both functional facilities and opportunities to exercise personal choice in how learning activities are conducted (Hussain & Ameen, 2023).

When analysed using the environmental psychology theory proposed by Mehrabian & Russell (1974), the physical conditions of library space can be understood through users' emotional responses to the environment, namely pleasure, arousal, and dominance. Good lighting and low noise levels tend to generate a sense of pleasure (comfort), which in turn contributes to increased students' learning concentration. In addition, from the perspective of Isabelle Vischer (2008), physical comfort is part of functional comfort, namely a condition in which the environment supports users' primary activities. In this context, facilities such as ergonomic study desks, air conditioning, and an orderly spatial layout

indicate that the library has met the aspects of functional comfort that contribute to students' learning effectiveness. This shows that the physical quality of space does not only function as a supporting factor, but also as a key determinant in shaping students' learning experiences. However, the physical conditions considered "comfortable" in this study are still at the level of basic standard fulfilment and do not yet fully reflect a user-centred spatial design. This indicates that optimizing spatial comfort is not sufficient through facility provision alone, but also requires a more user-experience-oriented design approach.

This study also demonstrates that spatial comfort should be understood as a dynamic interaction between physical environments and users' expectations. While adequate facilities and environmental quality contribute to comfort, users' perceptions are equally important in determining whether a space is considered supportive for learning. Students may have different preferences regarding lighting intensity, seating arrangements, and levels of social interaction. Therefore, library planners should continuously evaluate users' experiences and adapt spatial designs to changing academic needs. Such an approach is consistent with contemporary user-centred library design principles, which emphasise flexibility, inclusivity, and responsiveness to user behaviour.

Spatial Comfort from the Psychological Aspect

In addition to physical aspects, psychological aspects are also important factors in creating comfort within library spaces. The library does not only function

as a place for studying, but also as a space for managing academic stress. Students utilise the library as a place to find calm when facing academic pressure. This is expressed by a student of Universitas Muhammadiyah Sumatera Utara:

“When I feel stressed due to piled-up assignments and I am confused about where to work on them, I choose the library as a place that makes me feel comfortable and calm. As a result, I am able to concentrate and find new ideas to complete my tasks.” (Informant 4. Interviewed, April 9, 2026).

Based on interviews with active students of Universitas Muhammadiyah Sumatera Utara, the library functions as a space for students’ emotional regulation. This aligns with the concept of psychological well-being proposed by Ryff (1989), which emphasises that individual well-being is not only characterized by the absence of stress, but also by the presence of positive psychological conditions such as comfort, safety, and tranquility. From the perspective of Environmental Psychology, conducive spatial conditions can also help reduce stress levels and enhance individuals’ emotional well-being (Mehrabian & Russell, 1974). These conditions indicate that the library functions not only as an information centre, but also as a space that supports students’ emotional well-being. An emotionally supportive environment enables students to learn more optimally. This is consistent with the concept of well-being, which emphasises the importance of environments that provide individuals with a sense of safety and comfort.

The sense of calm reported by participants indicates that the library contributes to emotional regulation and

psychological recovery. This finding is consistent with recent studies emphasizing that academic libraries can support student well-being by providing environments that reduce stress, foster feelings of security, and promote positive mental health outcomes (Brewster & Cox, 2023). Consequently, the value of library spaces should be viewed not only in terms of information access but also in relation to their contribution to students’ emotional resilience.

Library as a Learning Commons and Healing Space

Students utilise the library not only for academic activities but also for recreational and relaxation purposes. The findings of this study reinforce the concept of Learning Commons proposed by Bennett (2003), which positions the library as a multifunctional space that supports both academic and non-academic activities. The library can also be used as a collaborative and recreational space. This is in line with the statement of an active student of Universitas Muhammadiyah Sumatera Utara:

“In my opinion, the library can serve as a place to relieve fatigue or seek tranquility. For example, when I feel bored with studying, I go to the library to read novels to fulfill my hobby and to entertain myself.” (Informant 5. Interviewed, April 12, 2026).

Figure 1 illustrates the open spatial arrangement, flexible seating areas, and relatively calm atmosphere within the library environment. The availability of varied seating arrangements and adequate lighting supports both individual and collaborative learning activities while



Figure 1. Reading Room of the Universitas Muhammadiyah Sumatera Utara

Source: Research findings, 2026

simultaneously creating a more relaxed and psychologically supportive environment for users. This statement strengthens the view that the library has transformed into a multifunctional space, serving as a collaborative, interactive, and recreational environment. The evolving role of academic libraries reflects broader developments in higher education, where learning spaces are expected to support both academic achievement and personal development. In this context, libraries provide opportunities for learning, interaction, and self-improvement, thereby enriching students' overall educational experiences.

In addition, the library's function as a healing space is also closely related to the concept of well-being, which emphasises the importance of environments that provide emotional comfort and opportunities for relaxation (Ryff, 1989). Students utilise

the library for various activities, such as reading, completing assignments, writing academic papers, as well as recreational activities like reading light literature. This indicates that the library serves as a space that provides emotional comfort and opportunities for relaxation for students.

The emergence of the library as a healing space reflects broader changes in students' expectations of learning environments. Modern students increasingly seek spaces that not only facilitate academic achievement but also support personal well-being and work-life balance. In this regard, the library provides an environment where students can temporarily disengage from academic pressures while remaining connected to educational resources. The availability of recreational reading materials, comfortable seating, and relatively quiet surroundings creates

opportunities for mental restoration. This finding is consistent with restorative environment theory, which explains that calm and supportive environments may help individuals recover from mental fatigue and psychological stress caused by prolonged cognitive activities (Peters & D’Penna, 2020). Such experiences may contribute to renewed motivation and improved readiness to engage in academic tasks (Applegate, 2019).

Furthermore, the role of the library as a healing space demonstrates that learning environments can simultaneously fulfill educational, social, and emotional functions. Rather than viewing academic productivity and well-being as separate objectives, the findings suggest that both dimensions can be supported through thoughtful spatial design and user-oriented services. Consequently, libraries may be considered strategic environments that foster not only learning outcomes but also students’ quality of life within higher education settings.

Constraints in Realizing Spatial Comfort

Although, in general, the spatial comfort of the Universitas Muhammadiyah Sumatera Utara Library is considered good, this study found several constraints that still need attention. From the users’ perspective, the main issue lies in suboptimal spatial arrangement, particularly in corridor areas that experience congestion due to the use of floor seating. This is reflected in the statement of an active student of Universitas Muhammadiyah Sumatera Utara:

“In my opinion, what is lacking in terms of comfort is the corridor area of

the library. The floor seating should be reduced because it makes it difficult for students who are looking for books, as the corridors are sometimes crowded and readers tend to cluster around the bookshelves. In addition, for the prayer room facility, I suggest there should be an improvement, namely the separation between male and female users.” (Informant 5. Interviewed, April 12, 2026).

In Environmental Psychology, this condition is known as “crowding”, namely a spatial density situation that can generate discomfort. Vischer (2008) explains that poorly managed spatial density can disrupt user activities and reduce the quality of experience within a space. This indicates that spatial arrangement is an important factor in creating library comfort. Crowding is influenced not only by the number of users within a space, but also by users’ perceived control over their surrounding environment. When users feel that the space is too crowded and they have little control over their environment, their level of comfort tends to decrease.

The spatial limitations of the Universitas Muhammadiyah Sumatera Utara Library indicate that aspects of spatial design and management still need to be optimised in order to accommodate high levels of user activity. In addition, supporting facilities such as the prayer room are also considered to require improvement, particularly regarding the separation of worship spaces based on gender. This shows that library spatial comfort is not only determined by the main reading areas, but also by the availability and management of supporting facilities provided by librarians. From the perspective of a librarian, it is stated that:

“The constraints encountered include the library space, which can still be considered relatively limited in size, budget limitations, limited facilities, as well as challenges in managing user behaviour.” (Informant 2. Interviewed, March 23, 2026).

The findings of this study indicate that these factors become obstacles in realizing a fully optimal library space that is oriented toward user comfort. There is a synergy between space management by librarians and user experiences in creating library comfort. Adequate physical aspects and a comfortable psychological atmosphere are able to support students' well-being, both in enhancing learning concentration and serving as a means of relaxation. However, improvements in spatial arrangement and supporting facilities are still needed so that the library can function optimally as a human-centred space oriented toward user well-being. Nevertheless, from a more critical perspective, the library as a multifunctional space may also potentially create spatial conflicts when crowding occurs. An imbalance between quiet zones and collaborative areas can reduce the quality of user experience if not properly managed.

The findings reveal that maintaining a balance between different user needs remains a significant challenge for library management. While collaborative spaces encourage interaction and discussion, other users may prefer quiet environments for individual study. Without clear zoning and effective space management, these differing expectations may create tension among users. Therefore, future library development should consider the

implementation of differentiated learning zones that accommodate various learning preferences while maintaining overall spatial comfort.

Support from Visitor Statistics Data

The perceived comfort of the library space among students is not only evident from interview results but is also reflected in the high level of user visits. This study's findings are supported by visitor statistics from the Universitas Muhammadiyah Sumatera Utara Library in April 2026, which show a high level of student visits from various study programs. The high number of visits indicates that the library remains actively utilised as a learning environment by students from different academic backgrounds. This condition may reflect students' positive perceptions regarding the availability of facilities, learning atmosphere, and spatial comfort provided by the library. This high intensity of visits indicates that the library plays a significant role in supporting students' academic activities.

Visitor data from the Universitas Muhammadiyah Sumatera Utara Library in April 2026 shows a relatively high level of student attendance across various study programs (Figure 2). These statistics suggest that the library has become an important environment for supporting students' academic activities and learning needs. This high visitation rate suggests that libraries designed as flexible and collaborative spaces tend to be more preferred by users (Bennett, 2003). In addition, a comfortable environment encourages individuals to engage more frequently in activities within it (Mehrabian & Russell, 1974).

Statistik Pengunjung & Peminjaman		
:: April 2026 ::		
Program Studi	Pengunjung	Peminjam
Agribisnis :	12	0
Agroteknologi :	36	0
Akuntansi :	163	46
Bimbingan Dan Konseling :	48	3
Doktor Hukum :	0	0
Dosen :	1	2
Ekonomi Pembangunan :	36	15
Guru :	0	0
Ilmu Administrasi Publik :	139	10
Ilmu Falak :	0	0
Ilmu Hukum :	413	182
Ilmu Hukum (Bedah Buku) :	4	17
Ilmu Kesejahteraan Sosial :	13	0
Ilmu Komunikasi :	244	11
Kedokteran :	0	0
Magister Akuntansi :	0	0
Magister Biomedis :	0	0
Magister Elektro :	0	0
Magister Ilmu Hukum :	1	0
Magister Ilmu Kenotariatan :	3	2
Magister Ilmu Komunikasi :	1	0
Magister Ilmu Pertanian :	0	0
Magister Manajemen :	2	0
Magister Manajemen :	3	2
Pendidikan :	6	1
Magister Pendidikan Agama Islam :	2	0
Magister Pendidikan Matematika :	244	55
Manajemen :	41	9
Manajemen Bisnis Syariah :	7	0
Manajemen Perpajakan :	0	0
Manajemen Program Doktor :	8	2
Pendidikan Islam Anak Usia Dini :	74	13
Pendidikan Agama Islam :	41	5
Pendidikan Akuntansi :	38	1
Pendidikan Bahasa Indonesia :	0	0
(Bukti Buku) :	55	9
Pendidikan Bahasa Inggris :	88	5
Pendidikan Guru Sekolah Dasar (PGSD) :	15	0
Pendidikan Matematika :	19	0
Pendidikan Pancasila dan Kewarganegaraan :	0	0
Pendidikan Profesi Guru / S-1 :	1	0
Pendidikan Program Doktor :	24	3
Perbankan Syariah :	0	0
PERTUKARAN MAHASISWA MERDEKA :	0	0
Relawan :	39	0
Sains Data :	119	2
Sistem Informasi :		

Figure 2. Visitor Data of the Universitas Muhammadiyah Sumatera Utara Library in April 2026

Source: Research findings, 2026

The Library of Universitas Muhammadiyah Sumatera Utara can be considered an attractive learning space for students. Nevertheless, visitor statistics should be interpreted cautiously because frequent attendance does not automatically indicate positive well-being outcomes. High visitation may also reflect the limited availability of alternative study spaces on campus. Therefore, quantitative visitor data should be understood alongside qualitative evidence that captures users' experiences, perceptions, and emotional responses toward the library environment. The combination of these perspectives provides

a more comprehensive understanding of the library's contribution to student well-being (Asher, 2017) a newly renovated technology and learning centre that provides services and spaces tailored to undergraduates' academic needs at Indiana University Bloomington (IUB).

The facilities and comfort provided are key components that may influence the number of visits. Libraries that offer a quiet learning environment, air conditioning, stable internet access, and adequate discussion areas tend to be more preferred. Students are more likely to spend time in the library than in other places because it provides a comfortable space for concentrating, studying, or even simply finding new ideas.

The library also plays a role in supporting students' well-being. A conducive, orderly, and relatively distraction-free atmosphere provides a sense of safety and psychological calm. This is particularly important for students who need a space to focus on studying, completing assignments, or simply seeking a more productive environment. The library can also serve as a healthy social space, where students are able to engage in academic interaction without the pressure of a noisy environment.

Thus, the high level of visits to the Library of Universitas Muhammadiyah Sumatera Utara can be understood as the result of a combination of academic needs and the quality of facilities that are able to create comfort and support students' well-being. This indicates that the library has transformed into a multifunctional space that not only serves as an information centre, but also as a learning environment

that enhances students' overall experience. The high visitation rate can also be analysed through the concept of "library as place," which emphasises that the attractiveness of a library is not only determined by its collections, but also by the quality of the space it offers. In this context, spatial comfort becomes one of the key factors that strengthens users' attachment to the library.

Implications for Students' Well-Being

Overall, the findings of this study indicate that the spatial comfort of the Library of Universitas Muhammadiyah Sumatera Utara contributes positively to students' well-being. The synergy between well-fulfilled physical and psychological aspects is able to create a conducive learning environment.

Previous international studies indicate that comfortable academic library environments contribute positively to students' academic engagement, emotional well-being, and institutional attachment (Temple, 2019). The findings of this study similarly demonstrate that the Library of Universitas Muhammadiyah Sumatera Utara supports students not only academically but also psychologically by providing a calm, safe, and emotionally supportive learning environment. In the Indonesian higher education context, psychological comfort and emotional calmness emerged as important factors influencing students' perceptions of well-being within the library space.

These findings reinforce the growing recognition that academic libraries play a

strategic role in supporting the development of the whole student. Comfortable and user-oriented library spaces may help students manage academic stress, improve concentration, and maintain emotional stability (Merga, 2020). Therefore, library space development should be considered part of broader institutional strategies aimed at enhancing student well-being, engagement, and quality of campus life. However, improvements in spatial zoning, circulation management, and supporting facilities remain necessary to ensure that increased usage does not lead to overcrowding and reduced user comfort.

Nevertheless, improvements in spatial arrangement and supporting facilities are still necessary to enhance service quality and ensure that the library functions optimally as a human-centred space oriented toward user needs. The findings indicate that spatial comfort plays a strategic role in supporting students' well-being. However, if not accompanied by adaptive space management, increased comfort may potentially lead to higher usage intensity, resulting in overcrowding issues. Therefore, a management approach is needed that not only focuses on improving facilities, but also on regulating capacity and spatial zoning in a sustainable manner.

CONCLUSION

This study concludes that the spatial comfort of the Universitas Muhammadiyah Sumatera Utara Library contributes positively to students' academic and psychological well-being by enhancing concentration, emotional stability, and overall learning experiences through

physical comfort, psychological safety, and supportive learning environments. The findings indicate that academic libraries function not only as learning facilities and spaces for academic activities but also as environments that support students' emotional well-being and stress recovery. Therefore, universities should continuously improve library spaces through better spatial arrangement, crowd management, facility enhancement, and user-centred design to create more conducive, safe, and inclusive learning environments. However, this study is limited to a qualitative analysis conducted within a single academic library context involving a limited number of informants, so the findings cannot be broadly generalised. Future studies are recommended to employ mixed-method or quantitative approaches with larger samples and different higher education contexts to examine the relationship between spatial comfort and student well-being more comprehensively.

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Author Contributions

Conceptualization, Y.L.N.S. and A.M.S.; methodology, Y.L.N.S.; investigation, Y.L.N.S.; writing—original draft preparation, Y.L.N.S.; writing—review and editing, A.M.S.; supervision, A.M.S. All authors have read and agreed to the published version of the manuscript.

AI Declaration

The authors declare that artificial intelligence tools such as ChatGPT were used only for language improvement and grammar checking. All scientific

interpretations, analyses, and conclusions remain the responsibility of the authors.

Data Availability Statement

The data presented in this study are available upon request from the corresponding author.

Conflicts of Interest

The authors declare no conflict of interest.

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