Examining the Role of Library Environment in Shaping Student Visit Intentions: A Comparative Approach

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Abstract

University libraries function not only as information repositories but also as critical learning environments that shape students' engagement and usage patterns. The study investigates the influence of three key environmental attributes: lighting, interior design, and satisfaction with crowding and spatial arrangement on MBA students' intention to visit the central libraries of the University of Kashmir (KU) and the Central University of Kashmir (CUK). Data were collected from 60 students at both universities using a structured questionnaire, evenly drawn from both institutions. Results from multiple regression analysis reveal that students' perceptions of lighting quality, interior, and spatial satisfaction significantly predict their intention to visit library, collectively accounting for approximately 36% of the variance in visit intention. In addition, independent samples t-tests shows statistically significant differences between KU and CUK students across all variables including their intention to visit the library. These findings highlight that students' engagement with academic libraries is shaped not only by functional or academic demands but also by their evaluations of the physical environment. The study underscores the importance for university administrators and library administration to prioritize environmental enhancements, such as optimized lighting, user-friendly interior layouts, and better space management as strategic interventions to improve student satisfaction and promote frequent library usage.

Keywords: *Library Environment, Lighting, Interiors, Crowding and Density, Library Visit Intentions*

Introduction

Over the past decade, university libraries have undergone a profound transformation, shifting from their conventional role as book-centred repositories to becoming multifunctional academic environments. Today's libraries are no longer limited to information storage; they have evolved into vibrant spaces that support a range of activities, including collaborative learning, access to digital resources, and independent study. With the diversification of learning preferences, students now expect library spaces to meet both their intellectual and emotional needs **(Applegate, 2009; Shill & Tonner, 2004).**

A central aspect influencing students' engagement with libraries is visit intention, which refers to an individual's perceived likelihood or motivation to enter and use library facilities. This behavioural construct is shaped by

both practical assessments—such as utility and ease of access—and emotional responses, such as comfort, familiarity, and spatial satisfaction (**Ahn et al., 2013; Baker & Crompton, 2000).** Various environmental factors—including the overall aesthetic appeal, degree of crowding, lighting quality, and ergonomic functionality—can significantly influence users' decisions to utilize library spaces **(Bitner, 1992; Wakefield & Blodgett, 1996).** Research has indicated that environments perceived as clean, well-lit, and spatially balanced tend to encourage users to return, whereas crowded or visually unappealing spaces may discourage repeated visits **(Kwallek et al., 1996; Machleit et al., 2000; Yildirim et al., 2011).**

To understand these behavioural patterns, two widely recognized frameworks can be applied. The Stimulus–Organism–Response (S–O–R) model **(Mehrabian & Russell, 1974)** explains how environmental stimuli—such as physical design and ambience—affect internal emotional states, which in turn, guide behavioural responses. Within the library setting, elements like interior colour schemes, spatial arrangement, lighting, and surface textures function as stimuli that influence cognitive and emotional evaluations such as satisfaction, comfort, and mental clarity, all of which contribute to the intention to revisit. Complementing this, the Theory of Planned Behaviour (TPB) **(Ajzen, 1991**) asserts that an individual's behavioural intention is determined by their attitude toward the behaviour, perceived social expectations, and confidence in their ability to perform the behaviour. In the context of library use, students who view the space positively, believe it aligns with academic expectations, and feel it is easily accessible are more likely to engage with it regularly.

Previous studies have emphasized that both affective experiences (such as emotional attachment and comfort) and cognitive factors (such as functionality and control over one's space) play a vital role in forming behavioural intentions **(Beerli & Martin, 2004; Yuan & Wu, 2008).** Students who associate the library with a calm, organized, and motivating environment are more likely to return, while those who perceive it as congested or disordered may limit their engagement **(Ko & Pastore, 2004).**

Despite the growing recognition of these issues, relatively little empirical research has explored library visit intention within the Indian context, particularly in regions like Jammu and Kashmir, where infrastructural limitations and socio-academic dynamics may differ from national norms.

To bridge this gap, the current study examines how key environmental dimensions—such as interior (wall colours, flooring, workspace finishes), lighting conditions, and perceived spatial crowding—affect library visit intention among MBA students at two institutions: the Central University of Kashmir and the University of Kashmir. Using a structured questionnaire, data was gathered from 60 respondents, evenly divided between the two universities. The study seeks to uncover the relationship between students'

environmental perceptions and their willingness to use the library facilities for academic engagement.

This research contributes to both theory and practice by applying established behavioural models to a novel regional and academic context. The findings are expected to guide educational policymakers, campus planners, and library administrators in designing environments that promote active student engagement and enhance the academic value of university libraries.

Theoretical Background

In recent times, increasing attention has been directed toward identifying the key factors that drive individuals' intentions to visit libraries, especially as these institutions are being reimagined as interactive, multi-purpose educational spaces. Within this framework, visit intention is defined as a user's anticipated likelihood to engage with or revisit a library. This behavioural tendency is shaped by both rational assessments—such as the library's perceived functionality—and emotional reactions, including feelings of comfort and attachment to the setting **(Ahn et al., 2013; Baker & Crompton, 2000).**

The Stimulus–Organism–Response (S–O–R) model provides a relevant theoretical lens through which to understand this process. The model posits that physical elements in an environment (stimuli) elicit internal psychological states (organism), which then lead to observable actions or intentions (response) **(Mehrabian & Russell, 1974).** In library contexts, environmental features—such as lighting design, spatial configuration, colour schemes, flooring types, and the tactile quality of furniture—serve as sensory inputs that influence users' moods and cognitive evaluations, ultimately informing their willingness to return. Environments that feature thoughtful lighting, calming wall tones, and visually appealing surface materials often generate feelings of tranquillity, focus, and satisfaction, thereby increasing revisit **intention (Kwallek et al., 1996; Yildirim et al., 2011).**

Another widely applied framework, the Theory of Planned Behaviour (TPB**)**, emphasizes that behavioural intention stems from one's attitude toward the behaviour, perceived social pressure (subjective norms), and confidence in one's ability to perform the behaviour (perceived behavioural control) **(Ajzen, 1991).** When applied to library usage, this theory suggests that positive attitudes—such as enjoyment of the ambience, perception of sufficient space, and satisfaction with the interior—can significantly enhance users' intentions to visit. For example, if users perceive the library as well-organized and conducive to both individual and group learning, with minimal noise and crowding, they are more likely to visit it **(Machleit et al., 2000; Wakefield et al., 1996).**

Drawing from both the S–O–R and TPB frameworks, it can be inferred that

factors such as interior, quality of lighting, and spatial density are instrumental in shaping users' decisions to visit libraries. These variables, encompassing both environmental stimuli and internal psychological responses, jointly determine how the library is perceived and whether it becomes a preferred place of academic engagement.

Literature Review
Visit Intention

Visit intention is generally understood as an individual's subjective judgment about the probability or desire to visit a specific place. It encompasses not only the personal interest in the destination but also how achievable or realistic the visit appears to be **(Ahn et al., 2013; Baker & Crompton, 2000).** This behavioural construct arises from a combination of rational evaluations—such as knowledge and perceptions of the location—and emotional reactions, including feelings of appeal or personal connection, ultimately influencing the decision to engage in the visit.

In the context of library usage, visit intention refers to an individual's anticipated likelihood or readiness to make use of library facilities, whether for educational, informational, or leisure-oriented purposes. This concept reflects not only the user's level of interest in the library but also their perception of how practical or convenient it is to access the space. Similar to other service-based environments, both utilitarian and emotional evaluations play a pivotal role in shaping this intention **(Ahn et al., 2013; Baker & Crompton, 2000).**

Insights drawn from research in tourism and consumer behaviour indicate that a user's motivation to visit a library is closely tied to their overall perception of the space, including its physical appeal and the quality of services offered. When the environment is perceived as inviting, well-equipped, and easy to navigate, users are more inclined to engage with the facility regularly **(Beerli & Martin, 2004; Chen et al., 2014)**. These positive perceptions are often influenced by previous experiences, physical ambiance, and the symbolic image the library conveys.

Light and Visit Intention

The design and physical conditions of libraries are instrumental in shaping patrons' perceptions, satisfaction levels, and behavioural intentions—particularly the likelihood of returning. Among the various environmental elements influencing user experience, lighting emerges as a pivotal factor, especially within academic and public library settings where prolonged engagement and focus are often required.

Empirical evidence indicates that effective lighting not only supports visual clarity and reading efficiency but also positively impacts users' cognitive performance and emotional states, thereby increasing their likelihood to frequently visit the space**. Küller et al. (2006)** highlighted that ambient

lighting affects individuals' emotional equilibrium, ultimately guiding their decision to approach or avoid specific environments. In educational contexts, appropriate illumination has been associated with enhanced concentration, minimized eye fatigue, and an inviting atmosphere conducive to extended study sessions **(Barrett et al., 2015).** These attributes are critical in library settings where users often participate in mentally intensive activities.

Bitner's (1992) servicescape framework further reinforces the significance of ambient features such as lighting in shaping consumer perceptions and behaviours. Supporting this perspective, **Applegate (2009)** found that students showed a clear preference for library spaces that offered warm, adjustable, and natural lighting conditions, which made them more inclined to revisit and recommend those environments. This aligns with findings in environmental psychology suggesting that daylight or lighting that closely simulates it contributes to a more satisfying and comfortable spatial experience, thereby encouraging repeated use **(Veitch & Galasiu, 2012).**

Given this body of research, it is logical to propose that the quality and design of lighting in library spaces play a meaningful role in influencing visit intentions.

H1: Lighting in the library significantly influences students' visit intention

Interior and Visit Intention

The interior and functional design of libraries play a fundamental role in shaping users' perceptions regarding comfort, usability, and visual appeal—factors that collectively influence their willingness to visit and utilize the space. Key aspects such as wall colours, flooring materials, and the surface finishes of work areas contribute significantly to creating an environment conducive to learning and prolonged engagement.

From a psychological standpoint, colour selection within interior environments can trigger diverse emotional and cognitive reactions. Calming and muted tones are often associated with feelings of warmth and relaxation, which can lead to extended stays and increased user satisfaction **(Yildirim et al., 2011).** Conversely, harsh or excessively vivid colours may cause sensory overload or discomfort. Within academic libraries, colour schemes that offer a balance between stimulation and tranquillity are especially appreciated, as they foster concentration while maintaining a visually pleasant atmosphere (**Kwallek et al., 1996).** This highlights the impact of well-considered wall colour choices on users' emotional engagement and their intention to revisit the space.

Additionally, the choice and maintenance of surface finishes on study desks, tables, and other workstations are essential for conveying a sense of cleanliness, order, and professionalism. Smooth and polished finishes that are clean and modern not only support visual clarity but also reflect positively

on institutional quality and care for the user experience **(Chism & Bickford, 2002).** Surface textures that minimize glare and support ergonomic use further enhance comfort, while outdated or poorly maintained furnishings may generate perceptions of neglect, thereby discouraging repeat visits.

Collectively, interior design components such as colour palettes, flooring types, and workspace finishes contribute to what **Bitner (1992)** conceptualizes as the *servicescape*—a framework describing how environmental cues influence emotional responses and behaviour in service settings. When these elements are carefully curated, they not only enhance the practical functionality of the library but also contribute to a more inviting and emotionally satisfying experience. Consequently, it is justifiable to propose that a well-designed and visually appealing library interior can positively influence users' intention to visit or return to the space.

H2: The Interiors of the library positively influence students' visit intention

Crowding and Visit Intention

User satisfaction and behavioural outcomes within library environments are significantly influenced by perceived crowding and how space is distributed among various functional areas. Crowding refers to the psychological discomfort experienced when individuals perceive insufficient personal or task-related space. This spatial stressor can shape how patrons assess the library's ambiance, comfort, and overall service quality **(Machleit et al., 2000).** Notably, the arrangement and density of spaces such as individual study zones, computer workstations, and collaborative areas can intensify or mitigate feelings of crowding. For solitary study spaces, adequate spacing is crucial to maintaining a quiet, distraction-free setting. When users encounter cramped or over-occupied study environments, they may experience reduced privacy, impaired focus, and general discomfort—factors that hinder the library's academic **purpose (Wakefield et al., 1996). Ko et al. (2004)** emphasized that environments with high spatial density often generate negative affective reactions, ultimately diminishing user productivity and satisfaction. As libraries transition into hybrid learning centres, it becomes increasingly important to design digital access areas with sufficient room for individual comfort and technological functionality. Group workspaces present a unique challenge, as they must support collaborative interaction without disrupting adjacent quiet zones. Poorly arranged or undersized group areas may result in spatial intrusion, thereby intensifying crowding perceptions and reducing the effectiveness of both individual and team activities. However, when collaboration spaces are clearly delineated, spacious, and acoustically treated, they enhance interpersonal engagement and foster positive evaluations of the library environment (**Wakefield et al., 1996).** Collectively, the spatial organization of functional areas influences emotional states and behavioural intentions of

library users. **Bitner's (1992)** servicescape framework illustrates how physical environmental cues—including spatial density—communicate symbolic meanings and shape user attitudes. A well-structured library layout that minimizes perceived crowding and ensures sufficient space for diverse activities can foster a sense of control, comfort, and satisfaction, ultimately encouraging repeat patronage. It is thus reasonable to posit that the careful allocation of space within libraries has a direct, positive effect on users' intention to visit. **Seung and Tae (2015**), in their evaluation of library usage at Kolej Profesional Mara Beranang, observed that poorly structured spatial arrangements negatively impacted user satisfaction. Inadequate access to diverse learning zones, such as quiet areas or group study sections, was a recurring concern among patrons. Their findings highlight the need for flexible and thoughtfully designed interiors that address various user preferences. Similarly, a report by **Valdosta State University** (2019) indicated that students favoured libraries with ample seating and less congestion, as these conditions supported a more focused and satisfying study environment. The psychological toll of crowding can also lead to adverse emotional reactions. **Zhang and Xu (2023)** identified that individuals in congested public or semi-public environments, including small-scale libraries, often experience emotional strain, such as irritation, helplessness, and mental fatigue. These negative emotions are strongly linked to decreased satisfaction with the environment and a reduced likelihood of return visits.

From a conceptual standpoint, the Stimulus–Organism–Response (S–O–R) framework provides a useful explanation for how crowding influences behaviour. Under this model, environmental characteristics such as spatial layout (stimulus) impact users' internal emotional states (organism), ultimately shaping behavioural intentions such as whether to revisit the space (**Mehrabian & Russell, 1974**). Similarly, the Theory of Planned Behaviour **(Ajzen, 1991**) posits that users' perception of how easily they can access and navigate the space—known as perceived behavioural control—influences both intention and actual engagement with the library. In both frameworks, spatial density is a critical environmental factor that can promote or inhibit user behaviour.

H3: Satisfaction with Crowding and Density in the library positively influences students' visit intention

Due to the differences in their historical development and infrastructural capacities, it is important to examine whether students from the Central University of Kashmir (CUK) and the University of Kashmir (KU) perceive their respective central library environments differently. As a newly established institution, CUK is still progressing in terms of infrastructural development, resource distribution, and enhancement of service quality. In contrast, KU,

with its longer-standing academic presence, is likely to offer a more mature, well-resourced, and student-centric library experience.

Such institutional variations are anticipated to influence students' perceptions of critical environmental attributes, including lighting conditions, interior, management of crowding and density, and their overall intention to visit the library. To statistically verify whether significant perceptual differences exist between the two groups, an independent samples t-test was employed. This method allows for the comparison of mean scores between CUK and KU students across the measured constructs. Based on this rationale, the following hypotheses are proposed:

H4a: There is a significant difference in the perception of lighting in the central libraries between students of CUK and KU.
$$\mu\ light\ CUK \neq \mu\ light\ KU$$
H4b: There is a significant difference in the perception of interiors in the central libraries between students of CUK and KU.
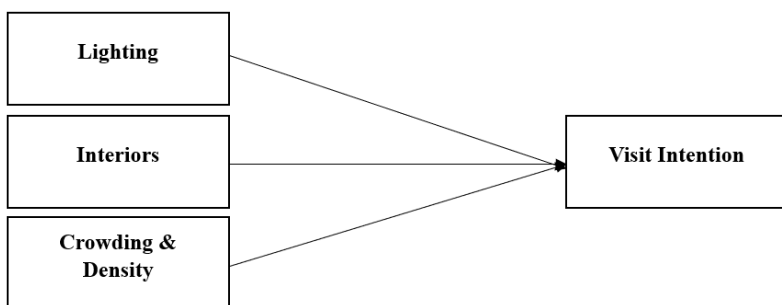$$\mu\ light\ CUK \neq \mu\ light\ KU$$
H4c: There is a significant difference in the perception of crowding and density in the central libraries between students of CUK and KU.
$$\mu\ light\ CUK \neq \mu\ light\ KU$$
H4d: There is a significant difference in visit intention to their respective central libraries between the students of Central University of Kashmir and the University of Kashmir.
$$\mu\ vi\ CUK \neq \mu\ vi\ KU$$

Figure 1: Conceptual Model

Methodology

This study employed a quantitative, cross-sectional research approach to assess the influence of environmental characteristics within academic libraries—namely lighting, interior, and perceived crowding and density—on students' intention to visit the library. Furthermore, the study compares perceptual differences between students enrolled at two distinct public

universities in Jammu and Kashmir: the Central University of Kashmir (CUK) and the University of Kashmir (KU). The study uses multiple regression analysis, students t-test and Welch's t-test for hypothesis testing. The study aims to capture students' environmental perceptions and behavioural intentions thereby providing a basis for statistical examination and group comparisons.

Sampling and Participants

Purposive sampling was used to select participants for the study. The target population consisted of postgraduate students enrolled in MBA programs at both universities. The final sample comprised 60 students, ensuring an equal distribution across the two institutions, with 30 students from CUK and 30 students from KU. The gender composition of the sample was evenly balanced, comprising 15 male and 15 female participants from each university (each representing 50% of the total sample). The final sample was drawn randomly from each group in both the universities. This sampling approach was intended to secure relevant insights from a focused, academically engaged student population.

Survey Instrument

Data collection was conducted using a structured, self-administered questionnaire, developed based on established and validated scales from prior empirical studies. For Lighting, measurement items were adapted from the study by Mumpuni and Wibisono (2020). For Interior Design measurement items were adapted from DeFrain and Hong (2020). For Crowding and Density measurement items were derived from Kilic and Hasirci (2011), focusing on users' satisfaction with environmental conditions in university libraries. Visit Intention was measured using items adapted from Bruner II (2009).

Lighting, crowding and density were measured on a 5- point Likert scale ranging from 1 to 5 with 1 (Strongly disagree) and 5 (strongly agree). Interior was measured on a 7 -point Likert scale ranging from 1 to 7 with 1 (Extremely dissatisfied) and 7 (Extremely satisfied). Lastly, both the items of Visit Intention were measured using 5 -point Likert scale. For the first statement 1 =very low and 5 = very high. While for the second statement 1= very unlikely and 5= very likely.

Data Collection

The data collection process involved administering printed questionnaires to MBA students during their regular classes. Students were given clear instructions and sufficient time to complete the survey instrument. Participation was entirely voluntary, and all respondents were assured of the confidentiality and anonymity of their responses.

Data Analysis

As seen in Table 1, the final sample consists of 30 Males (50%) and 30 females (50%). Similarly, 30 students (50%) are pursuing their M.B.A. at the University of Kashmir, while 30 students (50%) are pursuing their M.B.A. at Central University of Kashmir.

Table 1: Descriptive Statistics

Construct	m	s	Gender		University	
			Male (N)	Female (N)	KU (N)	CU (N)
VI	3.17	1.294				
LIGHT	3.11	1.382	30	30	30	30
INT	3.98	2.138				
CD	3.01	1.323				

Exploratory Factor Analysis

The results in Table 2 indicate that the sample is adequate, as the value of KMO exceeds .5 and the Bartlett's Test of Sphericity is significant (Hair et al., 2010). Therefore, the researchers can proceed with the EFA.

Table 2: Sample Adequacy

KMO Measure of Sampling Adequacy	.835	
Bartlett's Test of Sphericity (BTS)	Approx. c^2	951.51
	df	55
	p	<.001

As seen in Table 3, all the items load on their respective factors and none of the items have a factor loading of less than .5. Moreover, none of the items has a factor loading above .5 on any other dimension, indicating none of the items are cross-loading (Hair et al., 2010).

Table 3: Factor Loadings

Items	Dimensions		
	Light	Interior	Crowding & Density
LIGHT1	.959		
LIGHT2	.925		
LIGHT3	.935		
LIGHT4	.918		
LIGHT5	.913		
INT1		.950	
INT2		.930	
INT3		.935	
CD1			.931
CD2			.895
CD3			.934

Common Method Bias & Multi-Collinearity

The results in Table 4 indicate that the data do not suffer from multicollinearity as all the values of VIF are below 5, while Tolerance values exceed .40 as recommended by (Allison, 1999; Kock, 2015)

Table 4 : Multi-collinearity

	Light	Interior	Crowding and Density
Tolerance	.838	.730	.748
VIF	1.193	1.371	1.337

Note: Dependent Variable: Visit Intention

As the data was collected from peer groups, Durbin-Watson was used to test whether the data suffers from autocorrelation. The value of the Durbin-Watson test ranges from 0-4, with values between 1.5 to 2.5 indicating that autocorrelation among responses is not present (Turner, 2019). The value of 2.01 establishes that the responses do not suffer from autocorrelation. Furthermore, the R^2 value of .358 indicates that all the predictors in the model explain 35.8% of the variance in Visit Intention.

Table 5: Autocorrelation and Coefficient of Determination

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Durbin-Watson
Regression	.599[a]	.358	.324	1.064	2.01
a. Predictors: (Constant), CD, LIGHT, INT					
b. Dependent Variable: VI					

Linearity of the hypothesised relationships was tested using ANOVA. As seen in Table 6, linearity is significant while deviation from linearity is insignificant for all the relationships.

Table 6 : Data Linearity (ANOVA)

		m^2	F	*p*
VI * INT	(Combined)	3.140	2.778	.004
	Linearity	23.561	2.849	.000
	Deviation from Linearity	1.778	1.574	.122
VI * CD	(Combined)	3.277	2.431	.019
	Linearity	21.582	16.008	.000
	Deviation from Linearity	1.244	.922	.514
VI * LIGHT	(Combined)	36.228	1.555	.125
	Linearity	17.800	12.226	.001
	Deviation from Linearity	18.428	.844	.626

Normality of data was established using skewness and kurtosis. All the values fall between the range of ±1.96 (See Table 7) as recommended by Hair et al. (2010) supporting normality of data.

Further, QQ Plots [See Figure 2(a) to 2(d)] show that the data is normally distributed.

Table 7: Data Normality

	N	Minimum	Maximum	Skewness	Std. Error	Kurtosis	Std. Error
LIGHT	60	1.00	5.00	-.018	.309	-1.516	.608
INT	60	1.00	7.00	.146	.309	-1.555	.608
CD	60	1.00	5.00	.112	.309	-1.398	.608
VI	60	1.00	5.00	-.200	.309	-1.266	.608

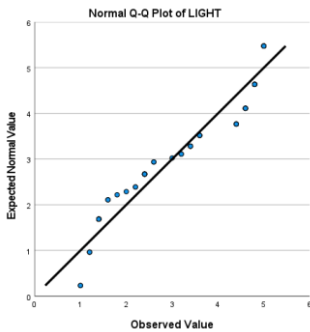**Fig. 2(a): QQ plot for Lighting**

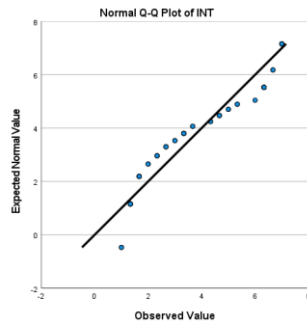**Fig. 2(b) : QQ plot for Interior**
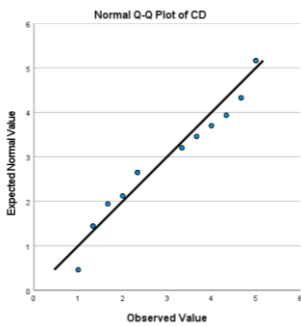

Fig. 2(c) : QQ plot for Crowding and Density

Fig. 2(a) : QQ plot for Library Visit Intention

Table 8 : Heteroskedasticity

c^2	df	Sig.
.081	1	.776

The results of the Breusch-Pagan Test (Table 8) indicate that the data is homoscedastic. (Breusch & Pagan, 1979).

Table 9 : Reliability and Validity Analysis

	a	CR	AVE	MSV	LIGHT	INT	CD	VI
LIGHT	.974	.974	.882	.199	**.939**			
INT	.981	.981	.946	.277	.377**	**.973**		
CD	.955	.958	.883	.272	.291*	.489***	**.940**	
VI	.916	.916	.845	.277	.447**	.527***	.522***	**.919**

Correlations: * p < .050 **, p < .010, *** p < .001

Reliability of the factors was established using Cronbach's Alpha (a) and Composite Reliability (CR). All the values exceed the recommended threshold of .7 (Hair et al., 2017; Nunnally & Berbstein, 1994).

Convergent Validity was established using CR and AVE. The values of CR exceed .7 while the values of AVE exceed .5, supporting convergent validity as recommended by Fornell and Larcker (1981) (See Table 9). Discriminant Validity was established using MSV, F&L Criteria and HTMT Analysis. MSV values exceed AVE values (see Table 9), establishing discriminant validity (Hu & Bentler, 1999). Further, the square root of AVE values (in bold, see Table 9) exceeds the inter-construct correlations, while the HTMT values are below .85 (See Table 10), further supporting the discriminant validity (Fornell & Larcker, 1981; Kline, 2011).

Table 10: Discriminant Validity (HTMT Analysis)

	LIGHT	INT	CD
INT	.370		
CD	.345	.486	
VI	.450	.515	.495

Table 11: Measures of Association

	R	R^2	Eta	$(Eta)^2$
VI * INT	.488	.238	.713	.508
VI * CD	.467	.218	.576	.332
VI * LIGHT	.424	.180	.605	.367

The R^2 values for each relationship in the regression analysis indicate that Interiors explain 23.8% change in the Visit Intention, Crowding and Density explains 21.8% change in the visit intentions and lighting explains 18% change in the visit intentions. These values exceed the minimum acceptable values of .1 (10%) in social sciences (Ozili, 2022).

The results of the Regression Analysis (See Table 12) indicate that Lighting (b = .239), Interiors (b = .281) and Crowding and Density (b = .256) significantly influence Visit Intention of students to their respective libraries. Therefore H1, H2 and H3 are accepted.

Moreover, Interiors have the strongest impact on Visit Intentions, while Lighting has the weakest impact on Visit Intentions among the three

predictors. However, as evidenced by beta values, the difference is not significant.

Table 12: Hypothesis Testing - Regression Analysis

b	Std. Error	b (Std)	t	p	
(Constant)	1.039	.415		2.506	.015
LIGHT	.224	.109	.239	2.047	.045
INT	.170	.076	.281	2.244	.029
CD	.250	.121	.256	2.068	.043

Dependent Variable: Visit Intention

Table 13 presents university-specific descriptive statistics. These indicate higher mean values across measured variables for Kashmir University than Central University. Therefore, the researchers proceeded with an independent samples t-test to check whether these differences were statistically significant.

Table 13 : University Level Descriptives

	University	N	m	s	Std. Error m
LIGHT	CU	30	2.467	1.06652	.19472
	KU	30	3.753	1.37634	.25128
INT	CU	30	3.189	1.89309	.34563
	KU	30	4.767	2.10482	.38429
CD	CU	30	2.600	1.11211	.20304
	KU	30	3.422	1.40588	.25668
VI	CU	30	2.683	1.26275	.23055
	KU	30	3.650	1.15333	.21057

The results in Table 14 indicate that there is a significant difference in the perception of environmental variables (Lighting, Interiors, Crowding and Density) and Visit Intention between students at Central University of Kashmir (CUK) and University of Kashmir (KU). Before proceeding with an independent samples t-test, researchers applied a Levene's Test to check Equality of Variances to determine the type of independent t-test to be used. The results indicate equality of variances for all variables except Crowding and Density. Accordingly, the significance of mean differences for Lighting, Interiors and Visit Intention was tested using student's t-test, while Welch's t-test was used to test the significance of mean differences for Crowding and density.

Table 14 : Hypothesis Testing – Independent Samples t-test

Levene's Test for Equality of Variances				t-test for Equality of Means							
		F	***p***	**t**	**df**	**Differences**					
						***p* (2-tailed)**	**m**	**Std. Error**	**95% Confidence Interval**		
	Equal Variances...								Lower		Upper
LIGHT	...*assumed*	3.905	.053	-4.05	58	**<.001**	-1.287	.32	-1.92		-.65
	...not assumed			-4.05	54.598	<.001	-1.287	.32	-1.92		-.65
INT	...*assumed*	.966	.330	-3.05	58	**.003**	-1.578	.52	-2.61		-.54
	...not assumed			-3.05	57.36	.003	-1.578	.52	-2.61		-.54
CD	...assumed	4.469	.039	-2.51	58	.015	-.822	.33	-1.48		-.17
	...*not assumed*			-2.51	55.081	**.015**	-.822	.33	-1.48		-.17
VI	...*assumed*	.263	.610	-3.10	58	**.003**	-.967	.31	-1.59		-.34
	...not assumed			-3.10	57.530	.003	-.967	.31	-1.59		-.34

Conclusion

The results of the regression analysis (refer to Table 12) indicate that all three environmental variables—lighting, interior, and crowding and density—exert a significant positive influence on students' intention to visit their respective university libraries.

Among these predictors, lighting demonstrated a standardized beta coefficient of β = .239 (p = .045), confirming its statistical significance, although its impact was comparatively weaker relative to the other environmental factors.

Interior emerged as the most influential factor (β = .281, p = .029), suggesting that students attribute considerable importance to the visual and physical characteristics of the library's internal environment when forming their behavioural intentions.

Similarly, crowding and density were found to significantly affect visit intention (β = .256, p = .043), indicating that students' perceptions of spatial adequacy and comfort play a meaningful role in determining their engagement with the library space.

These findings provide empirical support for hypotheses H1, H2, and H3, affirming that enhancement in environmental quality—particularly in the domain of interior design—can substantially increase students' propensity to utilize academic library facilities.

Comparative analysis between students of CUK and KU

(a) Lighting: The results of student's t-test reveal that there is a statistically significant difference in perceived lighting between CUK and KU students. The CUK students rate the lighting lower than KU students with a mean difference of 1.287. Therefore, H4a is supported.

(b) Interiors: The results of student's t-test reveal that there is a statistically significant difference in the perception of interiors between CUK and KU students. The CUK students rate the library interiors lower than KU students with a mean difference of 1.578. Therefore, H4b is supported.

(c) Crowding and Density: The results of Welch's t-test reveal that there is a statistically significant difference in the perception of crowding and density between CUK and KU students. The CUK students are less satisfied with the crowding and density in the library than KU students with a mean difference of .822. Therefore, H4c is supported.

(d) Visit Intention: The results of the student's t-test reveal that there is a statistically significant difference in the visit intentions of CUK and KU students to their respective central libraries. The CUK students have lower visit intentions towards their central library, with a mean difference of .967. Therefore, H4d is supported.

The results imply that students from KU—an older, more established institution with better-developed library infrastructure—harbour more favourable perceptions of the library environment and exhibit greater

behavioural intentions to visit, compared to students from the relatively newer CUK, which continues to evolve its infrastructural and service offerings.

The key findings of the study can be summarized as follows:

Among the environmental variables examined, interior exerts the strongest influence on visit intention, followed by crowding and density, with lighting having a relatively weaker impact.

Students from the University of Kashmir consistently rated their library's lighting, interior environment, spatial conditions, and their visit intentions more favourably than students from the Central University of Kashmir.

The findings suggest that institutional maturity and infrastructure quality substantially shape students' environmental perceptions and behavioural engagement with academic libraries.

Discussion

This research set out to examine how specific physical attributes of university libraries—namely, lighting, interior, and perceived crowding—affect students' intention to visit. The study focused on management students from two higher education institutions in Jammu and Kashmir: the Central University of Kashmir (CUK) and the University of Kashmir (KU). The research was guided by two well-established theoretical models: the Stimulus–Organism–Response (S–O–R) framework and the Theory of Planned Behaviour (TPB). Both the frameworks emphasize that environmental cues, along with internal psychological assessments, are central to understanding human behaviour. The findings reinforce the idea that students' behavioural decisions, particularly their willingness to engage with library spaces, are strongly shaped by their perceptions of the physical quality of the environment.

Lighting was found to be a statistically relevant variable influencing students' library use, affirming earlier findings that link effective lighting with better focus, psychological comfort, and visual appeal **(Kwallek et al., 1996; Yildirim et al., 2011).** However, among the three environmental factors examined, lighting had the least pronounced effect. This indicates that although appropriate lighting contributes to a positive environment, it may not be the primary motivator for students when deciding whether to use the library—especially when other features such as space organization or seating arrangements hold more immediate relevance in an academic setting.

The design and visual character of the library emerged as the most influential factor in determining students' intention to visit. Aspects such as wall colours, materials, layout, and furnishings were closely linked to increased satisfaction and frequent usage. This supports the S–O–R model's assertion that sensory and aesthetic cues in an environment can generate emotional

and cognitive responses, which in turn influence behaviour (**Bitner, 1992).** The findings also align with prior studies that suggest visually appealing and ergonomically thoughtful environments can foster a sense of connection and improve concentration **(Applegate, 2009; Wakefield & Blodgett, 1996).** This is especially relevant for MBA students, who often operate under high academic pressure and benefit from spaces that reduce fatigue and support mental clarity.

Students' perception of crowding was also a meaningful predictor of visit intention. Echoing earlier research (**Machleit et al., 2000),** the study found that high-density or overcrowded environments are linked to discomfort, loss of privacy, and stress—particularly in study zones requiring quiet or focused attention. Interestingly, while crowding negatively influenced visit intention, it did not have as strong an effect as interior. This suggests that a well-designed and visually balanced space may help alleviate the discomfort associated with crowding, possibly by making the space feel more open and functional.

One of the distinctive strengths of this study lies in its comparative analysis between CUK and KU students. Significant differences were identified across all variables, with KU students expressing more favourable perceptions regarding lighting, spatial design, and overall comfort. They also reported higher intentions to visit their university library. On the other hand, students from CUK rated these aspects lower.

This variation can be partly attributed to differences in institutional development. As a newer institution, the Central University of Kashmir is likely still in the process of scaling its infrastructure and refining its library services. Meanwhile, the University of Kashmir, with its longer establishment history and more developed infrastructure, is better positioned to offer a well-equipped and aesthetically appealing library environment. These disparities point to the role of institutional maturity and funding capacity in shaping students' environmental perceptions and usage behaviours.

Theoretical Implications

This study offers several valuable contributions to existing behavioural theories, particularly the Stimulus–Organism–Response (S–O–R) model proposed by Mehrabian and Russell (1974) and Ajzen's (1991) Theory of Planned Behaviour (TPB)

To begin with, the findings strongly validate the S–O–R framework within the context of academic libraries. By conceptualizing environmental elements such as lighting quality, interior design, and perceived spatial crowding as external stimuli, the study demonstrates how these features shape students' internal psychological states—including their evaluations of comfort, clarity, satisfaction, and annoyance. These internal states, in turn, influence whether students intend to visit or continue using the library. While the S–O–

R model has traditionally been applied in fields like retail and hospitality, the current findings affirm its relevance and adaptability to higher education and academic space design.

Moreover, the study enhances the explanatory power of the Theory of Planned Behaviour by connecting its primary components—attitudes, perceived control, and intention—with the physical and sensory dimensions of academic environments. Positive perceptions of well-lit and aesthetically pleasing library interiors not only form favourable attitudes but also elevate students' sense of control over their academic experiences. For instance, when learners feel that their environment is conducive to focus and productivity, they are more likely to intend regular use. Thus, this research highlights physical space as an influential antecedent in the TPB framework, particularly in educational contexts.

Furthermore, the differences in responses between students from Central University of Kashmir and University of Kashmir introduce a crucial socio-contextual element to behavioural prediction. The evidence suggests that environmental perceptions—and the behaviours they lead to—can vary significantly based on institutional characteristics and student expectations. These context-based differences imply that stimulus-response patterns are not universally fixed but are instead moderated by broader factors such as infrastructure quality, institutional maturity, and cultural norms. This intersection of environmental psychology and educational behaviour theory opens up new avenues for understanding how learning environments influence student engagement across varied academic settings.

Practical Implications

The results of this study have direct relevance for university administration, library administrators, campus designers, and education policymakers seeking to optimize library environments to support academic engagement.

The data underscore the importance of creating library spaces that go beyond fulfilling basic functional needs. Elements such as natural or warm lighting, thoughtfully chosen wall colours, comfortable and adaptable furniture, and spacious layouts significantly affect how students experience and engage with their libraries. Institutions aiming to improve library visitation should consider adopting user-focused design strategies, drawing on principles from environmental psychology and behavioural architecture.

Given that crowding negatively influences students' willingness to use library spaces, universities should focus on space differentiation. Creating clearly defined zones for various activities—silent study, collaborative work, digital access, and leisure reading—can help reduce noise spillover and improve user satisfaction. In addition, seating distribution can be used to manage crowding perception and maintain a balanced spatial experience.

The observed differences between CUK and KU highlight ongoing disparities

in infrastructure development. As a newly established institution, CUK may still be building its physical and operational capacities. Therefore, targeted investments in library infrastructure—such as enhancing interiors, upgrading lighting systems, and expanding digital access points—should be seen as a priority for newer or under-resourced universities. Government schemes, research grants, and private sector collaborations can provide funding to bridge these gaps and ensure equitable learning environments across institutions.

Introducing regular user feedback mechanisms, such as environmental satisfaction surveys, can help administrators identify problem areas and prioritize improvements. These insights allow for evidence-based decision-making, where resources can be allocated efficiently to enhance student experience and correct underutilized or negatively perceived spaces.

Supporting Academic Achievement and Well-Being

Ultimately, improvements in library environment design are not just aesthetic or operational—they have broader consequences for academic success and student well-being. A library that offers comfort, functionality, and visual harmony is likely to increase the time students spend on campus, enhance their engagement with course material, and foster a more focused, stress-reducing environment. These outcomes are especially valuable in demanding academic programs such as the MBA, where students require reliable and psychologically supportive spaces to succeed.

Limitations

The study was conducted with a relatively small and homogeneous sample of 60 postgraduate management students. This limited scope restricts the generalizability of the findings to broader student populations, other academic disciplines, or different institutional contexts. Data was collected at a single point in time, which limits the ability to examine changes in perceptions or behaviours over time. The use of self-administered questionnaires introduces the possibility of response biases, including social desirability bias and subjective misreporting, which may affect the accuracy of the reported perceptions and intentions.

The research focused exclusively on three environmental factors—lighting, interior, and perceived crowding. Other potentially influential variables, such as noise levels, temperature, availability of technological resources, and interactions with library staff, were not included and may also contribute meaningfully to library visit intentions.

Recommendations for Future Research

Future studies should incorporate larger and more demographically and academically diverse samples. Including students from various disciplines,

universities, and geographic locations would enhance the external validity and applicability of the results. Longitudinal research would enable scholars to observe how students' visit intentions change over time, particularly in response to environmental upgrades or administrative interventions within the library setting. Future research should consider expanding the range of environmental variables assessed. Elements such as thermal comfort, digital infrastructure, and staff support services could provide a more holistic understanding of factors influencing library use. Complementing quantitative analysis with qualitative approaches—such as in-depth interviews, open-ended survey responses, or focus group discussions— could offer deeper insights into students' subjective experiences, emotions, and preferences regarding library spaces.

Comparative studies across different types of institutions (e.g., public vs. private; urban vs. rural) and regions would help identify broader patterns and contextual differences. Such research could inform national and institutional policies aimed at promoting equitable access to high-quality academic environments.

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