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ASSESSMENT OF ACCESSIBILITY AND USER COMFORT IN SELECTED TRANSIT HUBS IN SOUTHWESTERN NIGERIA

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ABSTRACT

Transit hubs play an important role in facilitating passenger movement and supporting efficient public transportation; however, inadequate planning and deficiencies in design features can negatively affect users' comfort, accessibility and overall travel experience. The study specifically examined the socio-economic characteristics of transit hub users, evaluated the functionality of selected design features, and assessed users' perceptions of accessibility, circulation, comfort and environmental conditions. Seven transit hubs were purposively selected, comprising Terminal 1, Terminal 2 and Terminal 3 of the Oshodi Transport Interchange, Ikeja Bus Terminal, TBS Bus Terminal, Challenge Bus Terminal and Ojoo Bus Terminal. A total of 379 questionnaires were administered to passengers across the selected transit hubs, with all questionnaires successfully retrieved and analysed using descriptive statistics and Mean Weighted Value (MWV). The findings revealed that the users were predominantly female (57.0%), while the largest age group was 18–30 years (28.0%). Students constituted the largest occupational group (30.9%), while 84.5% of respondents had patronised the transit hubs for between one and five years. Assessment of design features showed varying levels of performance across the terminals. Parking spaces recorded an overall MWV of 3.68, waiting areas 3.59, ticketing booths 3.41, offices 3.30, and bus loading/off-loading bays 3.21. Accessibility of facilities recorded a relatively high overall MWV of 3.73, while 74.4% of respondents considered passenger and vehicular circulation

adequate. However, significant deficiencies were identified in environmental comfort and supporting facilities. Specifically, 62.8% of respondents reported that they were not comfortable within the terminals, while 67.0% indicated that ventilation was inadequate. Toilet facilities also recorded a relatively low overall MWV of 3.07. Despite these deficiencies, 67.0% of respondents considered transportation fares affordable. The study concludes that the effectiveness of a transit hub depends not only on the availability of transportation facilities but also on their adequacy, accessibility, environmental performance and ability to support user comfort. It therefore recommends a user-centred and climate-responsive approach to the design of the proposed Offa Garage Transit Hub, with emphasis on natural ventilation, thermal comfort, adequate sanitation, efficient circulation, accessible facilities, clear wayfinding, sufficient parking and loading spaces, comfortable waiting areas and effective weather protection. The findings provide empirical guidance for architects, planners, transport authorities and other stakeholders in developing more functional, accessible and user-responsive transit hub environments in Nigeria.

Keywords: Transit Hub, Bus Terminal, Design Features, User Perception, Accessibility, Thermal Comfort, Ventilation.

I. INTRODUCTION

Transit hubs are important components of urban transportation systems because they facilitate the movement and transfer of passengers between different transport modes while supporting associated commercial and public activities (Bell, 2019). Beyond their transportation function, contemporary transit hubs are increasingly conceived as integrated, accessible, and pedestrian-oriented environments that provide safe circulation, passenger comfort, efficient vehicle operations, and supportive public spaces (TNJ, 2019). Their effectiveness is therefore influenced not only by transportation operations but also by the quality of their architectural and spatial organization.

The rapid urbanization of Nigerian cities has increased pressure on existing transportation infrastructure. In Ilorin, Kwara State, growing population, increasing mobility demand, commercial activities, and intercity travel have intensified the use of major transport nodes such as Offa Garage, Challenge, Post Office, Maraba, Sango, and Geri Alimi. However, many of these facilities have developed incrementally without comprehensive spatial planning, resulting in congestion, disorganized vehicle circulation, inadequate parking, pedestrian-vehicle conflicts, overcrowding, and insufficient passenger amenities. These conditions reduce operational efficiency and can negatively affect users' safety, comfort, and overall travel experience (Adelekan, Johnson, & Manda, 2022).

The challenges associated with existing transit facilities extend beyond transportation operations to issues of accessibility and user experience. Inadequate pedestrian infrastructure, poorly organized circulation routes, insufficient waiting areas, limited accessibility provisions, and weak environmental conditions can create barriers for different categories of transit users. This is particularly relevant in cities such as Ilorin, where transportation facilities serve users with diverse socio-economic characteristics, travel purposes, and mobility needs. Understanding these characteristics and how users perceive the accessibility, comfort, and functionality of transit environments is therefore important for developing more responsive transportation facilities.

Previous studies on urban transportation in Nigeria have examined different aspects of transit systems, including travel behaviour, student mobility, land-use configuration, traffic flow, and environmental sustainability (Aderibigbe, 2022; Yusuf, Muili, Akinbami, & Hazeez, 2024; Aworemi, Adebanjo, & Ogundele, 2025; Isa & Ogundele, 2025). However, relatively limited attention has been given to the architectural and spatial characteristics of transit hubs in Ilorin, particularly the relationship between their design features and users' perceptions of accessibility and comfort. This represents an important gap because the physical organization of transit facilities directly influences pedestrian movement, vehicle circulation, waiting conditions, safety, and the efficiency of passenger transfers.

The need for improved transit infrastructure has also gained greater relevance within broader sustainable urban development objectives. UN-Habitat (2022) emphasizes the importance of accessible and sustainable transportation infrastructure in supporting inclusive urban development, while the World Bank (2023) identifies integrated public transportation as an important contributor to mobility, economic productivity, and environmental sustainability. Consequently, transit hub design must move beyond the provision of basic transportation facilities towards integrated environments that respond to circulation, accessibility, comfort, safety, and operational requirements.

Against this background, this study evaluates the design features of selected transit hubs, examines users' socio-economic characteristics and perceptions of accessibility and comfort, and identifies design considerations for improving transit environments in Ilorin. The findings provide a basis for developing an appropriate and functional transit hub proposal for Offa Garage, Ilorin, Kwara State, Nigeria.

II. LITERATURE REVIEW

2.1 Transit Hubs and Design Characteristics

A transit hub is an integrated transportation facility where different modes of transport converge to facilitate passenger transfer and support urban mobility. TNJ (2019) describes a transit hub as an area surrounding a transport station that accommodates diverse land uses, activities, and multimodal transportation connections. Similarly, UN-Habitat (2022) defines transit hubs as integrated facilities that support seamless transfers between transport modes, while the Federal Transit Administration (FTA, 2021) emphasizes their role in connecting multiple public transportation routes and providing supporting passenger facilities.

The effectiveness of a transit hub depends largely on its ability to integrate pedestrian circulation, vehicular movement, passenger flow, boarding and alighting areas, intermodal transfer spaces, safety, accessibility, and passenger amenities. Pedestrian circulation requires clearly defined and barrier-free routes, while vehicular circulation requires organized entrances, exits, bus bays, loading areas, and parking facilities. Passenger flow is enhanced through appropriate waiting areas, ticketing facilities, signage, and information systems (UN-Habitat, 2022; World Bank, 2022). Effective integration of these components reduces conflicts, improves movement efficiency, and enhances user experience.

2.2 Circulation, Accessibility and Functionality

Circulation is a fundamental component of transit hub design because it determines how efficiently pedestrians, vehicles, bicycles, and service traffic move within the facility.

Transport for London (2021) and NACTO (2020) emphasize the importance of connected movement networks, clear access points, pedestrian priority, and separation of conflicting traffic streams. Similarly, the Institute of Transportation Engineers (ITE, 2022) identifies the arrangement of movement paths, access points, waiting areas, and transfer facilities as essential to reducing delays and vehicle–pedestrian conflicts.

Accessibility extends beyond the immediate transport facility to include connections with surrounding roads, pedestrian routes, cycling infrastructure, parking, and nearby urban services. Carpentieri (2020) argues that transit accessibility should consider the ease with which different categories of users, particularly pedestrians and vulnerable groups, can reach and use transport facilities. Universal accessibility therefore requires ramps, handrails, accessible entrances, tactile paving, suitable pedestrian routes, and other barrier-free features (ISO 21542, 2021; UN-Habitat, 2022).

Functionality refers to the capacity of a transit hub to efficiently support passenger movement, transportation operations, information exchange, and supporting activities. ITDP (2021) identifies seamless modal connectivity, efficient circulation, clear wayfinding, adequate waiting spaces, and universal accessibility as essential characteristics of functional transit hubs. UITP (2023) further notes that modern facilities should combine operational efficiency with passenger-oriented services such as real-time information, digital ticketing, security, and commercial amenities.

2.3 Comfort and User Experience

Passenger comfort is an important indicator of transit hub performance. It encompasses thermal conditions, ventilation, seating, lighting, sanitation, weather protection, security, accessibility, and ease of movement (UITP, 2021; Transport for London, 2021). International Transport Forum (2021) further emphasizes that improved ventilation, adequate waiting areas, sanitation, and crowd management contribute to passenger confidence and wellbeing.

Comfort is therefore closely associated with the physical and functional quality of the facility. Inadequate seating, poor environmental conditions, overcrowding, insufficient sanitation, and unclear wayfinding can negatively affect users' perception of a transit hub even where transportation services are available. Consequently, transit hub design should consider both operational efficiency and the quality of the passenger experience.

2.4 Traffic Congestion and Transit Hub Performance

Traffic congestion occurs when transportation demand exceeds available road capacity, resulting in reduced speeds, longer travel times, vehicle queues, and operational delays (FHWA, 2023). World Bank (2021) identifies rapid urbanization, population growth, increasing vehicle ownership, and inadequate transport infrastructure as major causes of congestion in developing cities. UN-Habitat (2022) similarly associates congestion with inefficient urban mobility and emphasizes integrated transport planning and effective public transportation as strategies for improving urban movement.

Within transit hubs, poor circulation, inadequate parking, uncontrolled loading and unloading, insufficient bus bays, and pedestrian–vehicle conflicts can intensify congestion. Effective circulation planning is therefore necessary to separate movement streams, improve boarding operations, reduce unnecessary vehicle movements, and minimize delays.

2.5 Transit Hub Development and Contemporary Trends

Transit hub development in Nigeria has increasingly responded to rapid urbanization and growing demand for efficient public transportation. The National Development Plan identifies transportation infrastructure as an important component of economic development and promotes integrated transport systems across different modes (Federal Ministry of Transportation, 2021). Lagos provides a notable example through the development of BRT infrastructure, the Oshodi Transport Interchange, and integration between bus and rail services (LAMATA, 2023).

Despite these developments, many Nigerian transit facilities continue to experience inadequate pedestrian infrastructure, poor circulation, insufficient parking, weak accessibility provisions, inadequate security, and maintenance challenges (World Bank, 2022). Contemporary transit hub development is therefore shifting towards smart transportation technologies, sustainable design, universal accessibility, improved passenger amenities, and climate resilience. These include intelligent transportation systems, real-time passenger information, electronic ticketing, solar energy, natural ventilation, rainwater management, accessible facilities, electric vehicle infrastructure, and resilient drainage systems (ITF, 2021; IEA, 2023; UN-Habitat, 2022).

2.6 Transportation Needs of Vulnerable and Diverse Users

Transit facilities must accommodate users with different physical and mobility requirements. Older adults require barrier-free access, shorter walking distances, adequate seating, clear signage, appropriate lighting, handrails, and accessible vehicles (ISO 21542, 2021; WHO, 2021; FTA, 2024). Persons with disabilities similarly require step-free entrances, ramps, accessible toilets, tactile surfaces, accessible vehicles, and appropriate wayfinding systems.

For users with visual or hearing impairments, accessible information systems, tactile maps, Braille signage, audible announcements, and visual information displays are important for independent movement (World Blind Union, 2021). Safe pedestrian routes, curb ramps, signalized crossings, and adequate lighting further improve accessibility and safety (WHO, 2021). These considerations demonstrate that transit hub design should adopt an inclusive approach rather than assuming a uniform user profile.

2.7 Research Gap

Existing literature establishes the importance of circulation, accessibility, comfort, functionality, safety, and multimodal integration in transit hub design. However, much of the available research in Nigeria has concentrated on transport operations, mobility patterns, congestion, land-use relationships, and environmental sustainability, with comparatively limited attention to the architectural design features and users' perceptions of accessibility, comfort, and functionality within transit hubs in Ilorin.

This gap is particularly relevant given the continued operation of major transport nodes in Ilorin and the city's growing mobility demands. Therefore, this study evaluates the design characteristics of selected transit hubs, examines users' perceptions of accessibility and comfort, and identifies design considerations for the proposed development of an improved transit hub at Offa Garage, Ilorin, Kwara State.

III. RESEARCH METHODOLOGY

The research methodology features the research design, sources of data, study population, sampling frame, sample size, and methods of data collection. The methodology was structured to facilitate the assessment of design features, accessibility, comfort, circulation, and users' perceptions of selected transit hubs in Lagos and Ibadan, with the findings providing a basis for the proposed transit hub design for Offa Garage, Ilorin.

3.1 Research Design

The study adopted a mixed-method research design, combining quantitative and qualitative approaches. The quantitative component involved the administration of structured questionnaires to passengers and staff of selected transit hubs to obtain information on their socio-economic characteristics, perceptions, satisfaction, accessibility, comfort, and assessment of available facilities. The qualitative component involved direct field observation and case study assessment of the physical characteristics, spatial organization, circulation patterns, facilities, and accessibility provisions of the selected transit hubs.

A case study approach was adopted to enable detailed assessment of selected purpose-built transit hubs in Lagos and Ibadan. These locations were selected because they contain relatively developed transit facilities that provide useful examples of contemporary transit hub planning and design. The findings from the selected case studies were subsequently used to establish design requirements for the proposed transit hub at Offa Garage, Ilorin.

3.2 Study Area and Selection of Case Studies

The study focused on purpose-built transit hubs in Lagos and Ibadan, Southwestern Nigeria. The cities were selected because of their established public transportation systems and the presence of purpose-built transit facilities with different spatial, functional, and operational characteristics.

A preliminary assessment identified 12 existing purpose-built transit facilities within the selected cities. From these, seven transit facilities were selected based on their functional status, availability of standard facilities, spatial organization, accessibility, and ability to provide relevant information for evaluating transit hub design.The selected facilities comprised the three terminals of the Oshodi Transport Interchange (OTI), Ikeja Bus Terminal, Tafawa Balewa Square (TBS) Bus Terminal, Ojoo Bus Terminal, and Challenge Bus Terminal.

3.3 Types and Sources of Data

The study utilized both primary and secondary data.

3.3.1 Primary Data

Primary data were obtained directly from the selected transit hubs through structured questionnaires and field observation. The questionnaires were administered to passengers and staff to obtain information on their socio-economic characteristics, experiences, perceptions, accessibility, comfort, circulation, and satisfaction with the available facilities.

Direct observation was used to assess the physical and functional characteristics of the transit hubs, including passenger waiting areas, ticketing booths, bus loading and off-loading bays, parking areas, conveniences, pedestrian routes, accessibility provisions, circulation patterns, and general facility conditions.

3.3.2 Secondary Data

Secondary data were obtained from relevant books, journal articles, government publications, transportation reports, planning documents, design standards, and publications from organizations such as UN-Habitat, the World Health Organization (WHO), the World Bank, and transportation agencies. These materials provided theoretical, empirical, and technical information supporting the assessment of transit hub design, accessibility, circulation, comfort, and transportation planning.

3.4 Population of the Study

The population of the study comprised passengers and staff of the selected transit hubs. Passengers were defined as individuals who use the transit facilities to board, alight from, or transfer between vehicles, while staff comprised individuals involved in the operation and management of the transit hubs.

The target population consisted of adults aged 18 years and above who were users or staff of the selected transit facilities. The inclusion of both groups provided an opportunity to obtain perspectives from individuals who experience the facilities as passengers as well as those who interact with them through their daily work.

3.5 Sampling Frame and Sample Size

The sampling frame consisted of passengers and staff within the selected purpose-built transit hubs in Lagos and Ibadan. The total identified population across the selected facilities was 7,391, comprising 6,463 passengers and 928 staff.The sample size was determined using Slovin's formula at a 5% margin of error:

$$n = \frac{N}{1 + N\,(e)^2}$$

Where:

n = required sample size

N = total population

e = margin of error (0.05)

Thus:

$$n = \frac{7391}{1 + 7391\ (0.05)^2}$$

n=379

A total sample size of 379 respondents was therefore adopted for the study and proportionally distributed across the selected transit hubs based on their population sizes as seen in Table 1.

Table 1: Population and Sample Distribution of the Study

S/N	Selected Transit Hub	Passengers	Staff	Total Population	Sample Size
1	Oshodi Transport Interchange – Terminal 1	222	78	300	15
	Oshodi Transport Interchange – Terminal 2	780	120	900	45
	Oshodi Transport Interchange – Terminal 3	968	82	1,050	53
2	Ikeja Bus Terminal	1,525	150	1,675	84
3	Tafawa Balewa Square Bus Terminal	1,466	200	1,666	84
4	Ojoo Bus Terminal	814	148	962	48
5	Challenge Bus Terminal	700	150	850	50
Total		**6,475**	**928**	**7,403**	**379**

Source: Author's Compilation (2026)

3.6 Sampling Technique

A multi-stage sampling technique was adopted. According to Olademeji (2023), multistage sampling involves dividing a population into different stages and selecting samples according to predetermined characteristics such as geographical location and facility type.

The first stage involved the selection of Lagos and Ibadan as the study cities. The second stage involved identifying purpose-built transit hubs within the selected cities. In the third stage, transit hubs were selected based on their functional status, availability of relevant facilities, spatial organization, and suitability for assessing transit hub design characteristics.

The fourth stage involved identifying the population of passengers and staff within the selected facilities. In the final stage, the required respondents were proportionally selected from the identified population to obtain the overall sample of 379 respondents.

3.7 Method of Data Collection

Data collection was undertaken through structured questionnaires, direct observation, and case study documentation. The questionnaire was designed to obtain information on respondents' socio-economic characteristics and their perceptions of the accessibility, comfort, circulation, functionality, and adequacy of facilities within the selected transit hubs. The questionnaire items were structured using a five-point Likert scale where applicable.

Direct observation was undertaken to document the physical and functional characteristics of the selected facilities. Particular attention was given to pedestrian and vehicular circulation, bus loading and off-loading areas, passenger waiting spaces, ticketing facilities, parking areas, conveniences, accessibility provisions, signage, safety features, and general environmental conditions.

The case study assessment provided additional information on the spatial organization and design characteristics of the selected transit hubs. Photographic documentation and field notes were used to support the evaluation and comparison of the facilities.The principal instrument for the quantitative component of the study was a structured questionnaire, while an observation checklist was used for the physical assessment of the selected transit hubs.

The questionnaire consisted of sections covering respondents' socio-economic characteristics, use of transit facilities, perceptions of design features, accessibility, comfort, circulation, and satisfaction with available facilities. The observation checklist was developed from relevant literature and transit hub design principles to ensure systematic assessment of the selected facilities.

The instruments were designed to correspond with the major variables investigated in the study and to generate information applicable to the development of design recommendations for the proposed Offa Garage transit hub.

IV. DATA ANALYSIS

The study assessed seven purpose-built transit hubs comprising Terminal 1, Terminal 2 and Terminal 3 of the Oshodi Transport Interchange (OTI), Ikeja Bus Terminal, Tafawa Balewa Square (TBS) Bus Terminal, Ojoo Bus Terminal and Challenge Bus Terminal. A total of 379 questionnaires were administered to users of the selected transit hubs, and all administered questionnaires were retrieved and considered valid for analysis.

The analysis focuses on the socio-economic characteristics of respondents, the availability and adequacy of transit hub design features, and users' perceptions of accessibility, comfort, circulation and overall facility performance. Descriptive statistics, including frequency counts, percentages and Mean Weighted Values (MWV), were used to analyse the responses. The findings provide empirical evidence for identifying deficiencies in existing transit hub facilities and establishing appropriate design considerations for the proposed Offa Garage Transit Hub.

4.2 Socio-Economic Characteristics of Respondents

The socio-economic characteristics of the respondents were examined based on gender, age, marital status, educational level, primary occupation, duration of patronage and frequency of use. These characteristics provide an understanding of the profile of transit hub users and establish a basis for interpreting their perceptions of the existing facilities.

The findings indicate that female respondents constituted the majority (57.0%), compared with 43.0% male respondents. This suggests that women represent a substantial proportion of transit hub users within the study locations and highlights the need for facilities that respond to diverse user needs, particularly in relation to safety, comfort, accessibility and waiting facilities.

The age distribution shows that the largest proportion of respondents were 18–30 years (28.0%), followed by those aged 30–40 years (23.2%) and 40–45 years (21.0%). Collectively, these groups account for 72.2% of respondents, indicating that the transit hubs are predominantly used by people within the economically active age groups. However, the

presence of users aged 60 years and above (9.1%) reinforces the need for inclusive features such as step-free access, seating, handrails, clear signage and reduced walking distances.

In terms of marital status, 48.3% of respondents were married, while 28.2% were single. Divorced and widowed respondents accounted for 8.3% and 15.2%, respectively. The educational profile indicates a relatively educated user population, with 40.6% possessing tertiary education and 38.2% having secondary education. This suggests that most respondents were sufficiently literate to understand and provide informed responses regarding the quality and performance of transit hub facilities.

The occupational distribution shows that students constituted the largest group (30.9%), followed by respondents in other occupations (18.9%), staff (15.8%) and traders (15.0%). This indicates that the transit hubs serve a broad range of users with different mobility needs. Furthermore, 84.5% of respondents had patronized the transit hubs for between one and five years, demonstrating considerable familiarity with the facilities and strengthening the reliability of their perceptions regarding the existing design features.

Finally, the frequency of patronage shows that 78.6% of respondents used the transit hubs at least once a month, while 17.7% reported using them once a year. The high level of repeated use suggests that most respondents had sufficient experience with the facilities to evaluate their accessibility, comfort, circulation and functionality. Overall, the socio-economic profile confirms that the selected transit hubs serve a diverse but predominantly active and regular user population, reinforcing the need for designs that are accessible, comfortable, efficient and responsive to different categories of users.

Table 2: Socio-Economic Characteristics of Respondents (n = 379)

S/N	Variable	Category	Frequency	Percentage (%)
1	Gender	Female	216	57.0
		Male	163	43.0
		Total	**379**	**100.0**
2	Age	18–30	106	28.0
		30–40	88	23.2
		40–45	79	21.0
		45–60	71	18.7
		60–65	10	2.6
		Above 65	25	6.5
		Total	**379**	**100.0**
3	Marital Status	Single	102	28.2
		Married	187	48.3
		Divorced	32	8.3
		Widowed	58	15.2
		Total	**379**	**100.0**
4	Education	No formal education	9	2.3
		Primary school	71	18.9
		Secondary school	145	38.2
		Tertiary	154	40.6
		Total	**379**	**100.0**
5	Occupation	Driver	38	10.0

		Trader	57	15.0
		Student	117	30.9
		Civil servant	36	9.4
		Staff	60	15.8
		Others	71	18.9
		Total	**379**	**100.0**
6	Years of Patronage	Less than 1 year	60	15.5
		1–5 years	319	84.5
		6 years and above	–	–
		Total	**379**	**100.0**
7	Frequency of Patronage	Once a month	298	78.6
		Once a year	67	17.7
		Rarely	12	3.2
		First time	2	0.5
		Total	**379**	**100.0**

Source: Author's Fieldwork, 2026

4.3 Parking Space as a Design Feature at the Transit Hub

The assessment of parking space across the selected transit hubs indicates a generally favourable perception, although the level of satisfaction varies considerably among the terminals. The overall Mean Weighted Value (MWV) of 3.68 indicates that parking provision was generally satisfactory to the users. Challenge Bus Terminal recorded the highest level of satisfaction (MWV = 4.04), followed by TBS Bus Terminal (MWV = 3.95), Ikeja Bus Terminal (MWV = 3.92) and Ojoo Bus Terminal (MWV = 3.82). These relatively high scores suggest that users at these terminals considered the available parking arrangements more functional in relation to their transportation needs.

In contrast, Oshodi Terminal 3 recorded the lowest MWV of 2.88, indicating a comparatively less satisfactory parking condition. This lower rating may be associated with pressure on available parking areas, competition between vehicles and other terminal activities, or inadequate spatial separation between parking, pedestrian movement and loading activities. Oshodi Terminal 1 and Terminal 2, with MWVs of 3.40 and 3.76 respectively, performed better than Terminal 3 but still show room for improvement. The variation among the terminals demonstrates that the effectiveness of parking provision depends not only on the availability of space but also on its organization, accessibility and relationship with other terminal functions.

For the proposed transit hub at Offa Garage, the findings emphasize the need for a clearly organized parking system that separates passenger vehicles, buses, staff vehicles and other service vehicles. Adequate parking capacity should be accompanied by defined circulation routes, appropriate pedestrian access and sufficient manoeuvring space to prevent conflict between parked and moving vehicles. The observed performance at Challenge Bus Terminal provides a useful indication of the level of parking organization that users perceive positively.

Table 3: Parking Space at the Bus Terminal

S/N	Variables	5 Freq	4 Freq	3 Freq	2 Freq	1 Freq	F	TWV	MWV
1	Terminal1, Oshodi	1	4	10	-	-	15	51	3.40
2	Terminal2, Oshodi	-	36	8	-	1	45	169	3.76
3	Terminal3, Oshodi	-	5	45	2	5	57	164	2.88
4	Challenge bus terminal	10	31	6	1		48	194	4.04
5	Ojoo Bus Terminal	3	36	5	3	-	47	180	3.82
6	Ikeja Bus Terminal	9	65	9	-	2	85	334	3.92
7	TBS Bus Terminal	6	66	10	-	-	82	324	3.95
	Total	**29**	**243**	**93**	**6**	**-**	**8**	**379**	**x=3.68**

Source: Author's Fieldwork (2026)

4.4 Bus Loading/Off-Loading Bay at the Bus Terminal

The assessment of the bus loading and off-loading bays produced an overall MWV of 3.21, indicating a moderate level of satisfaction with this important operational component of the transit hubs. The relatively highest rating was recorded at Oshodi Terminal 1 (MWV = 3.40), closely followed by Challenge Bus Terminal (MWV = 3.37). These results suggest that the loading and off-loading arrangements at these locations were comparatively better perceived by users, although the scores do not indicate a highly satisfactory condition.

The lowest rating was recorded at TBS Bus Terminal (MWV = 3.06), while Oshodi Terminal 3, Ojoo and Ikeja each recorded MWVs of approximately 3.12–3.18. The concentration of scores around the neutral-to-moderately-satisfactory range suggests that loading and off-loading remain functional but may not be sufficiently optimized for user convenience and operational efficiency. Since loading and off-loading constitute one of the most important activities within a transit hub, inadequate spatial organization can affect vehicle circulation, pedestrian safety, waiting time and the general efficiency of terminal operations.

The findings therefore suggest that the proposed Offa Garage transit hub should provide clearly defined loading and off-loading bays with sufficient dimensions for vehicle manoeuvring and adequate separation from pedestrian circulation. The bays should also be strategically positioned to minimize unnecessary vehicle movement within passenger areas. Proper signage, designated boarding points and controlled vehicle circulation would further improve the efficiency of the loading and off-loading system.

Table 4: Bus loading/off-loading bay at the bus terminal

S/n	Variables	5 Freq	4 Freq	3 Freq	2 Freq	1 Freq	F	TWV	MWV
1	Terminal1,	10	-	15	-	-	25	95	3.40

	Oshodi								
2	Terminal2, Oshodi	-	8	36	1	-	45	142	3.16
3	Terminal3, Oshodi	1	4	47	-	-	52	162	3.12
4	Challenge Bus Terminal	3	11	28	1	-	43	145	3.37
5	Ojoo Bus Terminal	-	13	34	-	2	49	156	3.18
6	Ikeja Bus Terminal	1	14	67	1	-	83	264	3.18
7	TBS Bus Terminal	1	3	78	-	-	82	251	3.06
	Total	**16**	**53**	**305**	**3**	**2**	**379**		**x=3.21**

Source: Author's fieldwork (2026)

4.5 Ticketing Booths at the Bus Terminal

The findings on ticketing booths show a relatively favourable overall assessment, with an overall MWV of 3.41. However, there is a substantial variation in users' perceptions across the selected terminals. Challenge Bus Terminal recorded the highest MWV of 3.90, followed by Oshodi Terminal 3 with 3.88. These results indicate that the ticketing arrangements at these terminals were perceived as relatively functional and accessible by users.

Oshodi Terminal 1 recorded the lowest MWV of 1.67, representing a marked difference from the other terminals. This result indicates considerable dissatisfaction with the ticketing provision at this location and suggests possible problems relating to the adequacy, organization or accessibility of the ticketing facilities. The comparatively high scores recorded at Terminals 2 and 3 of Oshodi demonstrate that the problem may not necessarily be associated with the terminal complex as a whole but could be linked to the specific spatial or operational arrangement of Terminal 1.

The findings have important implications for the proposed transit hub at Offa Garage. Ticketing areas should be strategically positioned at easily identifiable points within the terminal and should provide sufficient space for queuing without obstructing pedestrian circulation. The design should also consider separate ticketing points for different routes or operators where necessary, adequate shelter, seating or queuing space, clear signage and sufficient staff working areas. These measures would reduce congestion and improve the efficiency of passenger processing.

Table 5: Ticketing Booth at the Bus Terminal

S/N	Variables	5 Freq	4 Freq	3 Freq	2 Freq	1 Freq	N	TWV	MWV
1	Terminal1, Oshodi	-	7	8	-	-	15	52	1.67
2	Terminal2, Oshodi	-	27	16	-	2	45	158	3.51
3	Terminal3, Oshodi	15	26	23	-	-	64	248	3.88

4	Challenge bus terminal	8	24	10	1	-	43	168	3.90
5	Ojoo Bus Terminal	4	23	18	2	-	47	170	3.62
6	Ikeja Bus Terminal	11	33	36	3	-	83	301	3.63
7	TBS Bus Terminal	l	4	45	32	1	82	298	3.63
	Total	**50**	**185**	**143**	**7**	**2**		**379**	**x=3.41**

Source: Author's fieldwork (2026)

4.6 Offices at the Bus Terminal

The assessment of office provision produced an overall MWV of 3.30, indicating a moderate level of satisfaction with the availability and functionality of offices within the selected transit hubs. Oshodi Terminal 1 recorded the highest MWV of 3.71, suggesting that users considered the office provision at this terminal comparatively satisfactory. Challenge Bus Terminal followed with an MWV of 3.40, while Ojoo, Ikeja, TBS and Oshodi Terminal 3 recorded values ranging from 3.13 to 3.30.

The relatively narrow range between most of the terminals indicates that office provision is generally functional but does not appear to be a particularly strong feature of the existing transit hubs. The lower scores at Oshodi Terminal 3 and Ikeja indicate that office spaces may not sufficiently meet the operational requirements of staff and terminal management. In a transit hub, offices are important for administration, ticketing operations, security management, transport operators and other support functions. Poorly located or inadequate offices may therefore affect the overall management of the facility.

For the proposed transit hub, offices should be incorporated as an integral part of the planning arrangement rather than being treated as residual spaces. Appropriate administrative offices should be located close to operational areas while maintaining adequate separation from passenger circulation spaces. Provision should also be made for staff welfare areas, security offices, transport operator offices and terminal management spaces to support efficient daily operation.

Table 6: Offices at the Bus Terminal

S/N	Variables	5 Freq	4 Freq	3 Freq	2 Freq	1 Freq	F	TWV	MWV
1	Terminal1, Oshodi	12	16	26	1	-	55	204	3.71
2	Terminal2, Oshodi	-	11	32	-	2	45	142	3.16
3	Terminal3, Oshodi	1	5	46	-	-	52	163	3.13
4	Challenge Bus Terminal	-	6	9	-	-	15	51	3.40
5	Ojoo Bus Terminal	-	16	29	2	-	47	155	3.30
6	Ikeja Bus Terminal	1	21	61	-	-	83	272	3.28
7	TBS Bus Terminal	1	11	69	1	-	82	258	3.15
	Total	15	86	272	4	2	379		x=3.30

Source: Author's fieldwork (2026)

4.7 Waiting Area at the Bus Terminal

The assessment of passenger waiting areas recorded an overall MWV of 3.59, indicating a generally favourable but moderate level of satisfaction. Oshodi Terminal 2 recorded the highest MWV of 3.91, followed by Challenge Bus Terminal at 3.81 and Oshodi Terminal 3 at 3.62. The relatively high scores at these terminals suggest that the waiting areas provide a reasonable level of functionality for passengers in terms of space and usability.

However, Oshodi Terminal 1 recorded the lowest MWV of 3.13, while Ikeja Bus Terminal recorded 3.48. Although these scores are above the neutral point, they indicate that the waiting areas may not fully satisfy users' expectations. The differences may be associated with the amount of seating, spatial capacity, environmental conditions, accessibility or the relationship between waiting areas and other terminal activities. Since passengers may spend considerable periods within the waiting areas, their design has direct implications for the overall user experience.

The findings therefore support the need for the proposed Offa Garage transit hub to provide sufficiently sized and well-organized waiting areas. Waiting spaces should include adequate seating, weather protection, natural ventilation, lighting and convenient access to toilets, ticketing facilities and boarding points. The waiting area should also be spatially separated from active vehicular circulation to improve safety and reduce disturbance from moving vehicles.

Table 7: Waiting Area at the Bus Terminal

S/N	Variables	5 Freq	4 Freq	3 Freq	2 Freq	1 Freq	F	TWV	MWV
1	Terminal1, Oshodi	-	2	13	-	-	15	47	3.13

2	Terminal2, Oshodi	12	30	13	2	-	57	223	3.91
3	Terminal3, Oshodi	-	34	16	2	-	52	188	3.62
4	Challenge Bus Terminal	2	32	8	1	-	43	164	3.81
5	Ojoo Bus Terminal	2	27	15	3	-	47	169	3.60
6	Ikeja Bus Terminal	1	46	31	2	3	83	289	3.48
7	TBS Bus Terminal	-	49	31	1	1	82	292	3.56
	Total	**15**	**220**	**127**	**11**	**4**	**379**		**x=3.59**

Source: Author's Fieldwork (2026)

4.8 Conveniences (Toilets) at the Bus Terminal

The assessment of conveniences revealed an overall MWV of 3.07, which is considerably lower than the ratings obtained for several other facilities assessed in the transit hubs. This indicates that toilet provision is one of the weaker aspects of the facilities considered by the respondents. Challenge Bus Terminal recorded the highest MWV of 3.19, while Ojoo and Oshodi Terminal 3 recorded MWVs of 2.81 and 2.83, respectively. TBS Bus Terminal also recorded a relatively low MWV of 2.70.

The lowest ratings were recorded at Oshodi Terminal 1 and Terminal 2, both with MWVs of 2.13. These results indicate a clear deficiency in the provision or quality of conveniences at these terminals. Given the basic nature of toilet facilities and their importance to passengers and staff, the low ratings suggest that existing provision may be inadequate in terms of quantity, accessibility, maintenance, cleanliness or spatial quality.

For the proposed Offa Garage transit hub, toilet facilities should therefore receive greater design consideration. Adequate numbers of male and female conveniences should be distributed at convenient locations within the terminal, with provision for persons with disabilities. The facilities should be easily accessible from waiting areas and other major passenger spaces without requiring users to cross active vehicle routes. Proper ventilation, drainage, water supply, maintenance access and hygiene facilities should also be incorporated into the design.

Table 8: Conveniences (Toilets) at the Bus Terminal

S/N	Variables	5 Freq	4 Freq	3 Freq	2 Freq	1 Freq	F	TWV	MWV
1	Terminal1, Oshodi	-	1	-	14	-	15	32	2.13
2	Terminal2, Oshodi	-	-	8	35	2	45	96	2.13
3	Terminal3, Oshodi	2	2	34	13	1	52	147	2.83
4	Challenge Bus Terminal	1	23	16	3	4	47	150	3.19
5	Ojoo Bus Terminal	12	16	16	37	10	91	256	2.81
6	Ikeja Bus Terminal	6	29	28	18	2	47	268	2.70
7	TBS Bus Terminal	3	6	38	33	2	82	221	2.70
	Total	29	87	138	118	7	379		x=3.07

Source: Author's Fieldwork (2026)

4.9 Adequacy of Circulation

The assessment of circulation indicates that the majority of respondents considered circulation within the selected transit hubs to be adequate. Out of the 379 respondents, 282 (74.40%) rated circulation as adequate, while 97 respondents (25.60%) considered it inadequate. This indicates that circulation is generally functioning satisfactorily across the selected terminals and is not perceived by the majority of users as the most critical problem within the existing transit hubs.

At the individual terminals, the proportion of respondents reporting adequate circulation was particularly high at Oshodi Terminal 3, Challenge Bus Terminal and Ikeja Bus Terminal, where only a small proportion considered circulation inadequate. In contrast, Oshodi Terminal 2 recorded a relatively higher number of respondents who considered circulation inadequate. This suggests that although the overall circulation system is functional, localized problems may exist in particular terminals, possibly due to the relationship between pedestrian movement, vehicle movement and other terminal activities.

The finding is important for the proposed Offa Garage transit hub because it demonstrates that functional circulation can be achieved when pedestrian and vehicular movement are appropriately organized. The proposed design should therefore maintain distinct circulation routes for buses, private vehicles, service vehicles and pedestrians. Adequate turning radii, controlled entry and exit points, pedestrian crossings, signage and unobstructed walkways should be incorporated to sustain efficient movement and minimize conflicts.

Table 9: Adequacy of Circulation at the Bus Terminals

S/N	Bus Terminal	Adequate (F)	Adequate (%)	Not Adequate (F)	Not Adequate (%)	Total (F)	Total (%)
1	Terminal 1, Oshodi	12	48.0	13	52.0	25	100.0
2	Terminal 2, Oshodi	8	17.0	39	83.0	47	100.0
3	Terminal 3, Oshodi	49	94.2	3	5.8	52	100.0
4	Challenge Bus Terminal	41	95.3	2	4.7	43	100.0
5	Ojoo Bus Terminal	38	80.9	9	19.1	47	100.0
6	Ikeja Bus Terminal	80	96.4	3	3.6	83	100.0
7	TBS Bus Terminal	54	65.9	28	34.1	82	100.0
Total	**All Terminals**	**282**	**74.4**	**97**	**25.6**	**379**	**100.0**

Source: Author's Fieldwork (2026)

4.10 Accessibility of Facilities at the Transit Hubs

The findings on accessibility indicate a generally positive perception among users, with an overall MWV of 3.73. This suggests that most respondents considered the facilities within the selected transit hubs reasonably accessible. Challenge Bus Terminal recorded the highest MWV of 4.00, followed closely by Ojoo Bus Terminal at 3.95, Oshodi Terminal 3 at 3.92 and Ikeja Bus Terminal at 3.90. These results indicate relatively strong accessibility performance at these terminals.

In comparison, Oshodi Terminal 2 recorded the lowest MWV of 3.19, indicating that users experienced comparatively greater difficulty accessing facilities at this location. Terminal 1 and TBS also recorded moderate-to-high ratings of 3.40 and 3.80, respectively. The variation suggests that accessibility is influenced by the spatial arrangement of facilities, pedestrian routes, entrances, distance between activity areas and the ease with which users can identify and reach required facilities.

The findings highlight the importance of accessibility as a major design consideration for the proposed Offa Garage transit hub. Facilities such as ticketing booths, waiting areas, toilets, parking areas and boarding points should be arranged according to a clear functional hierarchy, with direct and legible pedestrian connections between them. Universal accessibility should also be considered through ramps, appropriate walkway widths, accessible toilets, handrails, tactile or visual guidance where required, and safe crossings for all categories of users.

Table 10: Users' Perception of Accessibility of Facilities at the Bus Terminals

S/N	Bus Terminal	5 – Very High	4 – High	3 – Moderate	2 – Low	1 – Very Low	F	TWV	MWV
1	Terminal 1, Oshodi	–	13	2	5	–	20	68	3.40
2	Terminal 2, Oshodi	–	24	21	–	7	52	166	3.19
3	Terminal 3, Oshodi	1	46	5	–	–	52	204	3.92
4	Challenge Bus Terminal	6	32	4	1	–	43	172	4.00
5	Ojoo Bus Terminal	–	45	2	–	–	47	186	3.96
6	Ikeja Bus Terminal	2	71	10	–	–	83	324	3.90
7	TBS Bus Terminal	1	71	10	–	–	82	319	3.89
Total	**Overall**	**10**	**302**	**54**	**6**	**7**	**379**	**1,439**	**3.80**

Source: Author's Fieldwork (2026)

4.11 Level of Comfort at the Bus Terminal

The findings indicate that comfort remains a major concern across the selected transit hubs. Of the 379 respondents, only 141 (37.2%) reported that they were comfortable at the bus terminals, whereas 238 respondents (62.8%) indicated that they were not comfortable. This shows that, despite the availability of basic transit facilities, the existing terminals do not adequately provide a comfortable environment for users.

At the individual terminals, Challenge Bus Terminal recorded the highest proportion of comfortable users (55.8%), with 24 out of 43 respondents reporting that they were comfortable. TBS Bus Terminal followed, with 38 respondents (46.3%) indicating comfort. In contrast, Terminal 1, Oshodi recorded the lowest level of comfort, with only 4 respondents (26.7%) reporting that they were comfortable, while 11 respondents (73.3%) were uncomfortable.

The results further show that Terminal 2, Oshodi (71.1%), Ikeja Bus Terminal (67.5%), and Ojoo Bus Terminal (67.3%) also recorded relatively high proportions of users who were not comfortable. This pattern suggests that discomfort is not isolated to one terminal but is a recurring condition across the study locations. The finding therefore points to the need for greater attention to user-oriented design considerations such as adequate seating, ventilation, thermal conditions, spatial provision, shading, circulation and the general quality of waiting environments..

Table 11: Users' Perception of Comfort at the Bus Terminals

S/N	Bus Terminal	Comfortable (Freq.)	Comfortable (%)	Not Comfortable (Freq.)	Not Comfortable (%)	Total (Freq.)	Total (%)
1	Terminal 1, Oshodi	4	26.7	11	73.3	15	100
2	Terminal 2, Oshodi	13	28.9	32	71.1	45	100
3	Terminal 3, Oshodi	19	36.5	33	63.5	52	100
4	Challenge Bus Terminal	24	55.8	19	44.2	43	100
5	Ojoo Bus Terminal	16	32.7	33	67.3	49	100
6	Ikeja Bus Terminal	27	32.5	56	67.5	83	100
7	TBS Bus Terminal	38	46.3	44	53.7	82	100
Total	**Overall**	**141**	**37.2**	**238**	**62.8**	**379**	**100**

Source: Author's Fieldwork (2026)

4.12 Adequacy of Ventilation at the Bus Terminal

The findings indicate that ventilation is a significant environmental challenge across the selected bus terminals. Out of the 379 respondents, only 128 respondents (33.8%) considered the ventilation at the terminals adequate, while 251 respondents (66.2%) reported that the ventilation was not adequate. The result demonstrates that approximately two-thirds of the users experienced inadequate ventilation, indicating a considerable deficiency in the environmental performance of the existing transit facilities.

At the individual terminals, Challenge Bus Terminal recorded the highest proportion of users who considered the ventilation adequate, with 25 respondents (58.1%) giving a positive response. Terminal 1, Oshodi also recorded a relatively balanced response, with 12 respondents (48.0%) indicating adequate ventilation compared with 13 respondents (52.0%) who considered it inadequate. These results suggest that ventilation conditions at these terminals were comparatively better than those observed at the other locations.

In contrast, Ojoo Bus Terminal recorded the poorest ventilation performance, with only 9 respondents (18.4%) reporting adequate ventilation, while 40 respondents (81.6%) considered it inadequate. Similarly, Terminal 2, Oshodi and Ikeja Bus Terminal recorded 71.1% of respondents each reporting inadequate ventilation. Terminal 3, Oshodi and TBS Bus Terminal also recorded more negative than positive responses, with 67.3% and 65.9% of respondents respectively indicating inadequate ventilation.

Overall, the result establishes inadequate ventilation as one of the major environmental shortcomings of the existing transit hubs. This finding is particularly relevant to the proposed

design because improving ventilation can contribute simultaneously to thermal comfort, indoor air quality and the overall user experience of the transit facility.

Table 12: Users' Response to the Adequacy of Ventilation at the Bus Terminals

S/N	Bus Terminal	Adequate (Yes) Freq.	Yes (%)	Not Adequate (No) Freq.	No (%)	Total Freq.	Total (%)
1	Terminal 1, Oshodi	12	48.0	13	52.0	25	100
2	Terminal 2, Oshodi	13	28.9	32	71.1	45	100
3	Terminal 3, Oshodi	17	32.7	35	67.3	52	100
4	Challenge Bus Terminal	25	58.1	18	41.9	43	100
5	Ojoo Bus Terminal	9	18.4	40	81.6	49	100
6	Ikeja Bus Terminal	24	28.9	59	71.1	83	100
7	TBS Bus Terminal	28	34.1	54	65.9	82	100
Total	**Overall**	**128**	**33.8**	**251**	**66.2**	**379**	**100**

Source: Author's Fieldwork (2026)

4.13 Affordability of Transport Fare at the Bus Terminal

The findings indicate that transport affordability was generally perceived positively by the respondents. A total of 255 respondents (67.00%) considered the transport fare affordable, while 120 respondents (33.00%) considered it unaffordable. This suggests that the majority of users were able to access the transport services provided at the selected terminals without perceiving the fare as a major constraint.

At the individual terminals, Challenge Bus Terminal recorded the strongest perception of affordability, with 37 out of 43 respondents indicating that the fare was affordable. Ikeja also recorded a relatively high proportion of respondents who considered the fare affordable, with 63 out of 83 respondents giving a positive response. In contrast, TBS recorded a comparatively lower proportion of respondents considering the fare affordable, with 46 respondents indicating "Yes" and 36 indicating "No." The variation may reflect differences in routes, travel distances, passenger categories and the types of transport services operating at each terminal.

Although affordability is not directly a physical design feature, it is relevant to the overall functionality and social performance of a transit hub. A well-designed transit hub should facilitate efficient passenger movement and reduce unnecessary delays or operational inefficiencies that could indirectly increase users' travel costs. For the proposed Offa Garage transit hub, the design should therefore support efficient boarding, ticketing, circulation and

vehicle operations while providing an accessible and organized environment for different categories of transport users.

Table 13: Users' Perception of the Affordability of Transport Fare at the Bus Terminals

S/N	Bus Terminal	Affordable (Yes) Freq.	Yes (%)	Not Affordable (No) Freq.	No (%)	Total Freq.	Total (%)
1	Terminal 1, Oshodi	19	65.5	10	34.5	29	100
2	Terminal 2, Oshodi	28	71.8	11	28.2	39	100
3	Terminal 3, Oshodi	29	55.8	23	44.2	52	100
4	Challenge Bus Terminal	37	86.0	6	14.0	43	100
5	Ojoo Bus Terminal	33	70.2	14	29.8	47	100
6	Ikeja Bus Terminal	63	75.9	20	24.1	83	100
7	TBS Bus Terminal	46	56.1	36	43.9	82	100
Total	**Valid Responses**	**255**	**68.0**	**120**	**32.0**	**375**	**100**

Source: Author's Fieldwork (2026)

V. CONCLUSION

The study established that the effectiveness of a transit hub is strongly influenced by the quality, adequacy and functionality of its physical design features and the extent to which these features respond to users' needs. The assessment of selected transit hubs revealed that although several facilities, including parking spaces, ticketing booths, waiting areas, offices and circulation systems, recorded moderate to relatively high levels of user satisfaction, important deficiencies remain. The findings therefore suggest that the presence of a facility alone does not necessarily guarantee an effective transit environment; rather, its adequacy, accessibility, comfort and ability to support passenger movement are critical to the overall performance of the transit hub.

The study further revealed significant concerns regarding the environmental comfort of users. In particular, 67.0% of respondents reported inadequate ventilation, while 62.8% indicated that they were not comfortable within the bus terminals. These findings demonstrate that thermal and environmental conditions constitute important weaknesses in the existing transit hubs. The problem is further compounded by deficiencies in conveniences, where the overall mean weighted value for toilet facilities was relatively low (MWV = 3.07), indicating that sanitation and welfare facilities require greater attention. Consequently, the design of a purpose-built transit hub should move beyond the provision of transportation infrastructure to incorporate environmental conditions that support the health, comfort and well-being of passengers and staff.

The findings also showed that circulation and accessibility were comparatively stronger aspects of the existing terminals. About 74.4% of respondents considered the circulation of passengers and vehicles adequate, while accessibility recorded an overall MWV of 3.73. However, the variation between terminals demonstrates that good performance is not consistent across all facilities. For example, while Challenge Bus Terminal recorded the highest accessibility rating (MWV = 4.00), Terminal 2, Oshodi recorded the lowest (MWV = 3.19). This indicates that circulation and accessibility should be deliberately integrated into the planning of the proposed transit hub rather than treated as secondary considerations.

Recommendations

Based on the findings and conclusion of the study, the following recommendations are proposed:

1. **Provision of adequate natural ventilation:** The proposed transit hub should incorporate effective cross-ventilation through appropriate building orientation, adequately sized and positioned openings, high-level ventilation, shaded openings and appropriate roof design. Mechanical ventilation may be provided as supplementary support where necessary.
2. **Improvement of passenger comfort:** Since a majority of respondents reported discomfort within the existing terminals, the proposed facility should provide adequately sized and properly ventilated waiting areas, comfortable seating, shaded outdoor spaces and protection from direct solar radiation, rainfall and other adverse weather conditions.
3. **Adequate and hygienic sanitary facilities:** Toilets and other convenience facilities should be provided in sufficient numbers and distributed strategically across the transit hub. They should be accessible to passengers, staff and persons with disabilities and should be supported by appropriate cleaning, water supply and maintenance systems.
4. **Efficient circulation and segregation of movement:** Although circulation was generally considered adequate, the proposed transit hub should provide clearly defined routes for buses, private vehicles, pedestrians and service vehicles. Passenger and vehicular movements should be appropriately separated to reduce conflicts, congestion and potential safety hazards.
5. **Improved parking and loading/off-loading facilities:** Adequate parking spaces and clearly defined loading and off-loading bays should be incorporated into the design. These facilities should be dimensioned according to expected traffic volume and arranged to prevent buses and other vehicles from obstructing pedestrian movement.
6. **Clear wayfinding and passenger information systems:** The proposed transit hub should provide clearly visible directional signs, route information, terminal maps, electronic or static information boards and identifiable entrances and destinations. This will reduce confusion and enable passengers to navigate the facility independently.
7. **Universal accessibility:** All major facilities, including entrances, waiting areas, ticketing booths, toilets and pedestrian routes, should be designed to accommodate persons with disabilities, elderly passengers and other users with reduced mobility. Ramps, accessible toilets, appropriate walkway widths and clear signage should therefore form part of the design.
8. **Adequate ticketing and administrative spaces:** Ticketing booths and offices should be strategically positioned to ensure easy access without interfering with passenger

circulation. Sufficient administrative and operational spaces should also be provided for staff and transport operators.

9. **Regular maintenance and facility evaluation:** The performance of the transit hub should be periodically assessed after occupation. Particular attention should be given to ventilation systems, toilets, seating, signage, drainage, parking areas, lighting and circulation routes to ensure that the facility continues to meet operational and user requirements.
10. **Integration of environmental design strategies:** The proposed Offa Garage transit hub should incorporate climate-responsive strategies such as shading devices, appropriate building orientation, natural daylighting, landscaped areas and appropriate roof forms. These measures can improve environmental comfort while reducing dependence on artificial cooling and lighting.
11. **User-centred planning and management:** The preferences and experiences of passengers and staff should remain an important consideration in the planning and management of the transit hub. Feedback mechanisms should be established to enable users to report deficiencies and contribute to future improvements.
12. **Application of the findings to the proposed Offa Garage Transit Hub:** Finally, the identified strengths and deficiencies of the selected transit hubs should directly inform the architectural planning of the proposed facility at Offa Garage. The design should retain successful features such as functional circulation and accessibility while addressing identified shortcomings in ventilation, comfort, sanitation, waiting facilities, information systems and weather protection.

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