



Evaluation of Crowd Management Strategies in Hospitality Buildings in Southwest Nigeria

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Abstract: Effective crowd management is crucial in hospitality buildings to ensure safety, user experience, and optimize operational efficiency. However, many hospitality buildings are struggle with overcrowding, inefficient circulation, and inadequate emergency response measures, posing risks to both guests and staff. This study evaluates crowd management strategies in hospitality buildings across Southwest Nigeria, with a view to proposing design guidelines, which incorporates architectural planning techniques for seamless crowd circulation pattern. Both primary and secondary data were used for the study. Information were obtained from hospitality facility users, staff, and professionals, including architects, facility managers, and security personnel. A total of 403 respondents were administered with questionnaire using a systematic sampling technique. Descriptive statistical tools, including frequency counts, percentages, and Likert-scale were used to analyse. The study assessed causes of crowd incidences, existing crowd management strategies, and their effectiveness in hospitality buildings. The result shows that 68.4% of respondents attributing congestion to poor spatial planning, while 54.2% cited inadequate emergency exits as a major concern, 47.9% of respondents noted that a lack of designated waiting areas contributed to bottlenecks in high-traffic zones. Crowd management measures indicated that 71.6% of hospitality buildings relied on basic wayfinding signage, while only 43.8% had real-time monitoring systems in place. The result shows that 38.5% of the facilities had designated emergency assembly points, posing a significant risk during evacuations. The result on the rating of current crowd control measures show that 59.3% of respondents rate current crowd control measures as “Moderately Effective,” while 22.5% considered them “Ineffective.” Regarding improvements on the current state of facilities, 74.1% of respondents emphasized the need for wider circulation paths, while 65.8% advocated for increased signage and digital navigation tools to improve crowd flow. The study revealed that limited integration of advanced crowd management strategies, reliance on conventional spatial layouts, and inadequate use of technology were key factors hindering efficiency, safety, and seamless movement within hospitality buildings. Study concludes that effective crowd management is essential in hospitality buildings to enhance safety, optimize movement, and improve user experience. However, existing strategies in Southwest Nigeria are often inadequate due to poor spatial planning, insufficient emergency exits, and limited technological integration. It is recommended that hospitality buildings adopt passive design strategies such as wider circulation paths and clearly marked exit routes to improve crowd flow.

Keywords: Crowd Management, Hospitality Buildings, Management Strategies, Southwest Nigeria.

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1.0 Introduction

Crowd management in hospitality buildings refers to the strategic planning and implementation of measures designed to safely and efficiently control the flow and behavior of people within a facility (Green et al, 2023). Thus, effective crowd management strategy is critical in hospitality buildings, where large numbers of guests, staff and visitors interact within confined spaces. Hospitality buildings often face challenges related to high foot traffic, peak occupancy periods and the need for efficient movement and safety protocols. Proper crowd management strategies are therefore essential not only for enhancing guest experience but also for ensuring safety, minimizing risks during emergencies and optimizing operational efficiency.

Hospitality buildings are structures designed to accommodate guests and provide various services such as lodging, dining, recreation and entertainment, catering primarily to travelers and visitors. These buildings include hotels, resorts, motels and other similar facilities that aim to create a welcoming and comfortable environment for guests, often integrating amenities such as restaurants, conference centers and recreational spaces (Alavipanah et al, 2023; Smith & Johnson, 2022). The design and operation of hospitality buildings emphasize on guest experience, comfort and service efficiency, incorporating both functional and aesthetic elements (Williams & Lee, 2023, Makinde, et al, 2024).

Leisure centres are purpose-built facilities, often provided by individuals, firms or the governments that offers various recreational activities including sports, exercise and fitness (Sagunet et al, 2017). Typical amenities include swimming pools, gyms, sports halls, aerobics studios and sometimes outdoor pitches for sports like football and hockey. These centres are staffed by attendants who provide guidance, motivation and supervision, ensuring the safe and effective use of the facilities. Some leisure centres also feature additional amenities like cafeterias, saunas and steam rooms, making them versatile hubs for community engagement and wellness. Intricately, it is known fact that the significance of crowd management strategies is evident to anybody who has visited a crowded beach or observed the massive throngs at New Year's Eve celebrations in Times Square, New York (Sagunet et al, 2017). However, not all types of crowd management strategies are suitably for used during certain circumstances. There are several strategies for managing crowds at religious events, such as those at St. Peter's Square in Rome, the Hajj in Mecca or along the Ganges River in India (Daoliang et al, 2017, Helbing et al, 2019). Crowd management strategies for political events like parades, conventions and rallies are also of different approach (Wijermans, et al, 2018).

However, it has been established that whatever strategic approach adopted with regards to crowd management, the main crux of the matter about a wholesome crowd management is that, it involves working around a significant number of risks hence, its management strategies should be forthrightly planned beforehand (Chen & Teng, 2019). This is because the circumstances around the design of the crowd-controlling mechanism, its readiness and how well it is able to identify, assess and regulate crowd will all have an impact on the degree, severity and exposure to risk. As a result, it is important to take the time to recognize, research and evaluate the dangers associated in this situation (Appert-Rolland, et al, 2018).

Consequently, in recent years, the need for robust crowd management has gained increased attention due to heightened awareness of safety concerns, changes in users' behavior and the evolving landscape of hospitality operations post-pandemic. The COVID-19 pandemic, for instance, introduced new dynamics into crowd management strategies, including the need for social distancing, controlled access and enhanced monitoring of indoor spaces (Chen et al, 2023, Makinde and Amao 2024). These developments have driven the adoption of advanced technologies and strategic planning approaches to manage crowd flow and reduce congestion in hospitality environments.

Additionally, technological advancements, such as real-time monitoring systems and smart crowd control devices, have revolutionised the way crowd management is approached in hospitality settings (Smith & Jones, 2023). These tools allow operators to anticipate crowding issues before they occur, make data-driven decisions to improve flow and swiftly implement crowd control measures. Studies have shown that the integration of such technologies not only enhances safety but also improves guest satisfaction by reducing waiting times and enhancing the overall experience (Garcia et al, 2023).

Furthermore, design interventions are playing a crucial role in managing crowds effectively. Architectural layouts that incorporate spacious lobbies, multiple entry and exit points, and strategically placed signage can significantly reduce bottlenecks and guide the flow of people through the space (Lee & Kim, 2022). Moreover, the use of flexible spaces that can be reconfigured based on crowd size and type of event is becoming increasingly popular in modern hospitality design (Davies et al, 2023). However, despite the advancements, challenges remain in implementing effective crowd management strategies, particularly in balancing operational efficiency with safety and comfort. It is therefore expedient that there must be considerations for variety of factors, including cultural and regional differences in guest behavior, the diversity of event types hosted and the unique spatial constraints of each building (Ahmed & Patel, 2023).

Thus, as previously indicated, crowd management strategies in huge capacity buildings are crucial. However, the criteria for crowd management in high-capacity facilities can be conflicting because of the aim to improve modalities for ease of mobility while also aiming to restrict and monitor movement (Billington et al, 2020). Hence to create a sensible balance, it is necessary to adopt a more pragmatic strategies of crowd management. As such, ongoing evaluation and adaptation of crowd management strategies are crucial to meet the evolving needs of hospitality environments. Therefore, this study aims to evaluate crowd management strategies adopted in the design of a leisure center with a view of enhancing safety regulations within spaces in a hospitality building through the use of various architectural planning control principles. This entails assessing the effectiveness of current crowd management strategies in hospitality buildings, focusing on identifying best practices and areas for improvement in the context of recent technological and societal changes.

2.0 Literature Review

Hospitality and leisure buildings are structures that are designed to accommodate guests and provide them with a range of amenities and services to enhance their experience. These buildings

can include hotels, restaurants, bars, entertainment venues, and other similar establishments. According to Weaver and Lawton (2018), hospitality and leisure buildings are structures designed and constructed to accommodate visitors and provide them with a range of amenities and services, such as food and beverage, entertainment, and recreational activities. Similarly, O'Gorman and Singh (2018) describe hospitality buildings as establishments that provide guests with accommodation, food and drink, and other services, such as leisure facilities and entertainment. These definitions suggest that hospitality and leisure buildings are designed to provide guests with a variety of experiences and services. There are various types of hospitality and leisure buildings, including hotels, restaurants, bars, casinos, and entertainment venues (Weaver & Lawton, 2018 and Makinde, 2020a.).

According to O'Gorman and Singh (2018), hotels are typically high-end establishments that offer luxurious accommodation, dining and recreational facilities. Restaurants and bars, on the other hand, are focused on providing guests with food and drink. Casinos and entertainment venues offer visitors a range of gaming and entertainment options. The design of hospitality and leisure buildings can vary depending on the type of establishment and the desired guest experience. According to Weaver and Lawton (2018), hotels often feature luxurious amenities and high-end finishes, such as marble floors and chandeliers. Restaurants and bars may feature unique and creative design elements, such as custom lighting fixtures or artwork. Entertainment venues may have a more open and flexible design to accommodate a variety of performances and events (O'Gorman & Singh 2018).

Crowd management strategies are essential for ensuring the safety and comfort of guests in hospitality buildings, such as hotels, restaurants and entertainment venues. These strategies involve the use of architectural means to control the flow of people and minimize congestion in high-traffic areas. According to Roggema and Stadler (2019), crowd management strategies are strategies designed to regulate and control the movement and behavior of people within a defined space, such as a hospitality building. Similarly, Ali and Al Azzawi (2018) describe crowd management strategies as the use of architectural and organizational measures to ensure the safety and comfort of guests in high-density spaces. These definitions suggest that crowd management strategies involve the use of various measures, including architectural means, to manage the movement and behavior of people in hospitality buildings (Ali & Al Azzawi, 2018).

There are various architectural means of crowd management strategies that can be employed in hospitality buildings. According to Roggema and Stadler (2019), these means can include the use of clear signage, the creation of multiple entry and exit points, the design of wide and open spaces and the installation of barriers to control the flow of people. Additionally, the use of technology, such as crowd monitoring systems, can help to manage crowd density and movement. The use of architectural means in crowd management strategies is essential for ensuring the safety and comfort of guests in hospitality buildings. According to Ali and Al Azzawi (2018), architectural means can help to minimize congestion and reduce the risk of accidents, such as slips and falls. Additionally, the use of architectural means can improve the

overall guest experience by creating a more comfortable and welcoming environment (Roggema & Stadler, 2019).

According to Khamisi et al. (2019), one of the primary problems crowd managements identified in resort buildings is the lack of integration with the surrounding environment. The authors argue that resort buildings often do not consider the local context and the design does not blend in with the natural environment, leading to an unsatisfactory guest experience. Similarly, Gharachorlou and Arjmandi (2017) emphasize the importance of site planning in resort building design. They suggest that resort buildings should be designed in a way that maximizes the use of the natural environment and topography to create a unique guest experience. The authors argue that resort buildings that fail to consider the site's natural features may result in a negative impact on the surrounding environment, leading to ecological and environmental problems.

In addition, Che-Ani et al. (2015) highlight the importance of sustainability in resort building design. The authors argue that resort buildings should be designed with a focus on sustainable development to minimize their impact on the environment. They suggest incorporating sustainable features such as energy-efficient systems, rainwater harvesting and the use of environmentally friendly materials to create a more sustainable resort building design. Another common problem identified in resort building design is the lack of accessibility and circulation. According to Nawi et al. (2014), the layout of resort buildings can often lead to poor accessibility and circulation, creating inconvenience for guests. The authors suggest that resort buildings should be designed with a focus on guest comfort and ease of movement, with consideration given to the placement of facilities and amenities. Finally, Zhao and Shen (2018) argue that resort building design should take into account the changing needs of guests. The authors suggest that resort buildings should be designed to offer flexibility in accommodation and amenity options to meet the varying needs of guests. They argue that a lack of flexibility in resort building design can lead to decreased guest satisfaction and limited use of facilities (Makinde, 2020b).

Resort buildings face a range of challenges related to integration with the surrounding environment, sustainability, accessibility and circulation and changing guest needs. However, through the implementation of common and unique solutions, architects can create resort buildings that are environmentally conscious, accessible and provide personalized experiences for guests.

3.0 Methodology

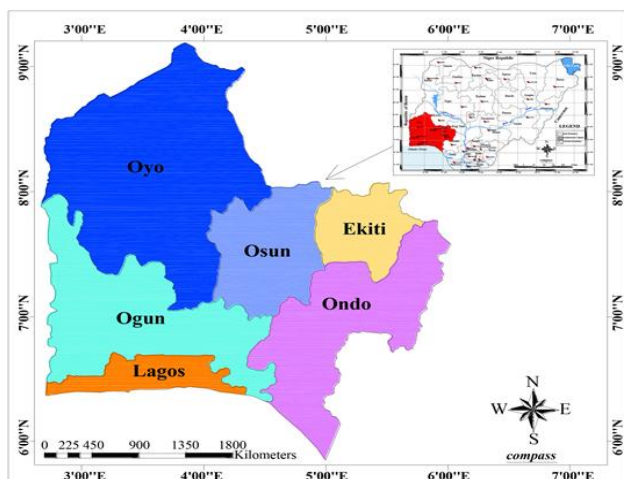
This study employed a mixed method of qualitative and quantitative research approach, involving the systematic collection and statistical analysis of numerical data to address the research objectives while also at the same time giving adequate considerations to established review of literatures. Structured questionnaires was carefully designed and distributed to key respondents who are users of the facilities, staff members and various design professionals. These questionnaires was collected using quantitative data on various aspects including the socioeconomic characteristics of the respondents and all other information regarding the research focus based on the objectives of the study.

3.1 Study Area

Southwest Nigeria is a region that comprises six states: Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti. This area is significant due to its economic, cultural and demographic diversity, making it an ideal location for studying crowd management strategies in hospitality buildings. The region is known for its vibrant tourism and hospitality industries, driven by its rich cultural heritage, historical landmarks, natural attractions and bustling urban centers. Lagos, for instance, is not only Nigeria's economic hub but also a major destination for both business and leisure travelers, boasting a high concentration of hotels, resorts and other hospitality facilities. Southwest Nigeria offers a dynamic and representative setting for studying crowd management strategies in hospitality buildings.

The hospitality sector in Southwest Nigeria plays a critical role in the region's economy, attracting visitors from across the globe. With a mix of urban and rural settings, the region presents unique challenges and opportunities for crowd management in hospitality buildings. The bustling urban centers, particularly in Lagos and Ibadan, often experience high foot traffic and require robust crowd management strategies to ensure the safety, comfort and satisfaction of guests. Conversely, hospitality establishments in more tranquil, rural settings, such as those found in parts of Osun and Ekiti, may deal with different crowd dynamics, including peak seasons associated with local festivals or holiday periods.

Figure 3.1 Southwest Nigeria and its Six States



Source: Oyinloye et al., 2023

Given the large number of hospitality buildings in Southwest Nigeria, the study uses a combination of stratified random sampling and convenience sampling techniques. Hence the following factors were considered. A multistage sampling technique was used to ensure that representative's sample of identified hospitality buildings were selected from each of the established senatorial district in each state within the region. Also, there were stratified sampling by state, in which hospitality buildings were stratified by state to ensure an even distribution of samples across Lagos, Oyo, Ogun, Osun, Ekiti, and Ondo.

Additionally, the hospitality buildings will be further stratified into categories based on their usage and crowd capacity (e.g., hotels, resorts/leisure centres, conference/convention centres or spa/wellness centre). This is to ensure that the sample covers a range of hospitality building types with varying crowd management demands. From the stratified categories, random sampling was used to select individual buildings.

The sampling frame was based on a comprehensive list of hospitality buildings in the selected states. These were establishments registered with relevant bodies such as; the Nigerian Tourism Development Corporation (NTDC). A list of registered hospitality buildings was accessed through its official database; this is premise on the fact that it is the main governmental body responsible for overseeing and regulating hospitality establishments in Nigeria. Also, states ministries of tourism provided verified records for hotels, resorts and other hospitality establishments in their respective states. Additionally, the study makes use of online hospitality directories that provides details of hotels and resorts in the region, often verified by tourism boards or professional associations. Therefore, purposive sampling was employed to select facilities all the senatorial districts of the six states of the study area. These facilities were purposely selected such that at a hotel, resorts/leisure, conference /convention centers or spa/ wellness center is chosen.

Table 3.1 shows the analysis of hospitality buildings in southwest region based on the reports by the Nigerian Tourism Development Corporation (NTDC), the various states tourism boards and online directories.

Table 3.1: Analysis of Hospitality Buildings / States in Southwest Nigeria

SN	State	Identified Hospitality Buildings in South West Nigeria	Approx. No. of Hospitality Buildings in each State	Sample Frame	Percentage (%) of Sample size (5%)
1	Oyo	Hotels	350	154	8
		Conference /Convention Centers		106	5
		Resort / Leisure Centers		22	1
		Spas and Wellness Centers		68	3
		Total		350	
2	Ogun	Hotels	400	192	10
		Conference /Convention Centers		150	8
		Resort / Leisure Centers		18	1
		Spas / Wellness Centers		40	2
		Total		400	
3	Ondo	Hotels	180	78	4
		Conference /Convention Centers		56	3
		Resort / Leisure Centers		15	1
		Spas / Wellness Centers		31	2
		Total		180	
4	Ekiti	Hotels	150	46	2
		Conference /Convention Centers		58	3
		Resort / Leisure Centers		12	1
		Spas / Wellness Centers		34	2
		Total		150	
5	Osun	Hotels	220	94	5
		Conference /Convention Centers		78	4
		Resort / Leisure Centers		10	1
		Spas / Wellness Centers		38	2
		Total		220	12
6	Lagos	Hotels	1200	658	33
		Conference /Convention Centers		294	15
		Resort / Leisure Centers		96	5
		Spas / Wellness Centers		152	8
		Total		1200	61

Source: Author's Construct 2024

Consequently, Table 3.3 shows the analysis of different hospitality buildings typologies per state in southwest Nigeria and their staff's strength, while also detailing the spread in percentages, the purported sample frame of the hospitality buildings.

Table 3.2: Sample Size Determinants

S/N	Hospitality Buildings	Staffs (Nos)	Guest (Nos)
1.	Hotel	10	50
2.	Conference/Conventional Centres	6	50
3.	Resorts/Leisure Centre	6	50
4.	Spas/Wellness Centre	3	20

Table 3.3: Staff's Sample Frame Schedule of Hospitality Buildings

SN	State	Identified Hospitality Buildings in South West Nigeria	Staff Strength/ Typology (sample frame)	Percentage % of Sample size (2%)
1	Oyo	Hotels	154	31
		Conference/Convention Centers	106	13
		Resort / Leisure Centers	22	3
		Spas and Wellness Centers	68	4
			350	51
2	Ogun	Hotels	192	38
		Conference/Convention Centers	150	18
		Resort / Leisure Centers	18	2
		Spas / Wellness Centers	40	2
			400	60
3	Ondo	Hotels	78	16
		Conference/Convention Centers	56	7
		Resort / Leisure Centers	15	2
		Spas / Wellness Centers	31	2
			180	27
4	Ekiti	Hotels	46	9
		Conference/Convention Centers	58	10
		Resort / Leisure Centers	12	1
		Spas / Wellness Centers	34	2
			150	22
5	Osun	Hotels	94	19
		Conference/Convention Centers	78	9
		Resort / Leisure Centers	10	1
		Spas / Wellness Centers	38	2
			220	31
6	Lagos	Hotels	658	132
		Conference/Convention Centers	294	35
		Resort / Leisure Centers	96	12
		Spas / Wellness Centers	152	9
			1200	188

Furthermore, Table 3.4 shows the core respondent being the purposive sampling schedule for the sample frame from which the sample size will be determined. The purposive selection of hospitality buildings is such that a hotel, resorts/leisure, conference /convention centers or spa/ wellness center will be selected. The survey was carried out in all the three senatorial districts in each of the southwest states.

This choice is based on the premise that all the senatorial districts have their peculiar local area configuration. Hence, in order to capture a larger opinion poll, it was convenience to include all districts of the respective states. Also, all senatorial districts possess varying amount of hospitality buildings, hence it is considered that virtually all the typology of hospitality building identified will be available for selection in the district.

Table 3.4: Guests Sample Frame Schedule in Hospitality Buildings

SN	State	Identified Hospitality Buildings in South West Nigeria	Guest Typology (sample frame)	Strength/ Percentage % of Sample size (2%)
1	Oyo	Hotels	154	7700
		Conference /Convention Centers	106	5300
		Resort / Leisure Centers	22	1100
		Spas and Wellness Centers	68	1360
		Total	350	15460
2	Ogun	Hotels	192	9600
		Conference /Convention Centers	150	7500
		Resort / Leisure Centers	18	900
		Spas / Wellness Centers	40	800
		Total	400	18800
3	Ondo	Hotels	78	3900
		Conference /Convention Centers	56	2800
		Resort / Leisure Centers	15	750
		Spas / Wellness Centers	31	620
		Total	180	8070
4	Ekiti	Hotels	46	2300
		Conference /Convention Centers	58	2900
		Resort / Leisure Centers	12	600
		Spas / Wellness Centers	34	680
		Total	150	6480
5	Osun	Hotels	94	4700
		Conference /Convention Centers	78	3900
		Resort / Leisure Centers	10	500
		Spas / Wellness Centers	38	760
		Total	220	1582
6	Lagos	Hotels	658	32900
		Conference /Convention Centers	294	14700
		Resort / Leisure Centers	96	4800
		Spas / Wellness Centers	152	3040
		Total	1200	9376

Conclusively, Table 3.5 detailed the summary of staff members and guest in various hospitality building across the six states in southwest Nigeria.

Table 3.5: Summary of Staff and Guest Schedule in Hospitality Buildings

S/N		Total Staff Strength / State	Total Guest Strength / State	Total Hospitality Buildings Surveyed / State
1	Oyo	51	309	17
2	Ogun	60	376	21
3	Ondo	27	161	10
4	Ekiti	22	130	8
5	Osun	31	97	12
6	Lagos	188	1109	61
Total		379	2282	129

The total sample size of the hospitality building to be surveyed across all the states is 88 numbers, based on the sample size calculation, this is configured based on information from Table 3.2. While the total number of respondents targeted for the study will be inferred from the above Tables 3.3 and 3.4 respectively.

Hence for all of the hospitality building that will be selected, 159 numbers of staff member's respondent from the identified study populations of the users was surveyed to represent the opinion regarding that particular facility under survey. Also 244 numbers of users or guest respondents are to be surveyed. This ensures balanced data collection across all selected locations. Thus, based on the comprehensive listing of all facility units in each selected hospitality buildings compiled; a random starting point was chosen within the first interval. This will help in introducing randomness and reducing bias in the selection process of respondents.

Additionally, with a targeted sample size of 403 respondents per the surveyed hospitality establishments from each senatorial district of the six states, it is believed that a broader representation will be achieved. As such respondents will be sampled through convenience sampling, where respondents were selected based on their availability and willingness to participate in the study during their visit to the establishments.

4.0 Data Analysis and Interpretation of Findings

4.1 Socio-demographic Characteristic of respondent in hospitality buildings in Southwest Nigeria.

The data from Table 4.1 presented the socio-demographic characteristic of respondent in the hospitality buildings in Southwest Nigeria.

The respondents in the hospitality industry within Southwest Nigeria are predominantly within the age group of 31–40 years, accounting for 47.9% of the total. This age group is highly represented in Lagos State (48.1%) and Osun State (65.1%), showing a concentration of active mid-career professionals. The 41–50 years group follows, comprising 21.3% of respondents, with significant representation in Ogun State (38.5%) and Lagos State (16.0%). The youngest group, aged 20–30 years, makes up 25.3%, with notable percentages in Lagos (28.4%) and Ondo State

(26.7%), showing some level of youth involvement in the industry. Meanwhile, respondents aged 51–60 years constitute 5.5%.

In terms of education, a majority of respondents (49.4%) hold postgraduate degrees, particularly in Lagos State (53.2%) and Osun State (48.8%). This shows that a significant portion of the workforce in the hospitality industry is highly educated. Those with tertiary-level education make up 36.2%, with strong representation in Ogun State (33.8%) and Lagos State (34.6%). Respondents with secondary education constitute the smallest group at 14.4%, with the highest percentages found in Oyo State (18.0%) and Osun State (18.6%). This shows that secondary education is less common among hospitality professionals in the region. The hospitality industry in Southwest Nigeria is primarily driven by individuals in the 31–40 years age group (47.9%), showing a workforce in their most active and productive years. This age concentration reveals a dynamic industry with individuals to bring innovative ideas and energy to the sector. The relatively high representation of younger professionals (20–30 years, 25.3%) show some level of generational renewal, although this group is less dominant compared to mid-career professionals.

The minimal participation of those aged 51 and above (7.5% combined) highlights a potential gap in retaining older, more experienced professionals. For the Educational Attainment of the respondent the high proportion of respondents with postgraduate degrees (49.4%) reveal the intellectual capital within the hospitality industry. This is particularly evident in Lagos and Osun States, where the majority of respondents possess advanced degrees. The significant presence of tertiary-educated respondents (36.2%) further supports the idea that the industry values formal education and specialized knowledge. Lagos State consistently dominates in both age and educational attainment categories, emphasizing its role as a key hub for hospitality activities in the region. This shows the state's economic and educational advantages, which attract and sustain a highly educated workforce. States like Oyo and Osun, while contributing significantly in specific categories, exhibit lower overall engagement in comparison to Lagos, showing potential disparities in opportunities and development within the hospitality sector. Overall, the hospitality industry in Southwest Nigeria is characterized by a predominantly young and mid-career workforce that is highly educated, particularly in Lagos State.

Table 4.1 Socio-demographic Characteristic of respondent in the hospitality buildings in Southwest Nigeria.

Southwest State	Age										Total		Highest Level of Education								Total	
	20-30 years		31-40 years		41-50 years		51-50 years		61 + above				Secondary		Tertiary		Postgraduate					
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%		
Oyo State	15	16.9	45	50.6	24	27.0	5	5.6	-	-	89	22.1	16	18.0	35	39.3	38	42.7	89	22.1		
Ogun State	22	33.8	18	27.7	25	38.5	-	-	-	-	65	16.1	12	18.5	22	33.8	31	47.7	65	16.1		
Ondo State	8	26.7	12	40.0	7	23.3	3	10.0	-	-	30	7.4	3	10.0	9	30.0	18	60.0	30	7.4		
Ekiti State	5	25.0	15	75.0	-	-	-	-	-	-	20	5.0	-	-	12	60.0	8	40.0	20	5.0		
Osun State	8	18.6	28	65.1	5	11.6	2	4.7	-	-	43	10.7	8	18.6	14	32.6	21	48.8	43	10.7		
Lagos	44	28.2	75	48.1	25	16.0	12	7.7	-	-	156	38.7	19	12.2	54	34.6	83	53.2	156	38.7		
Grand Total	102	25.3	193	47.9	86	21.3	22	5.5	-	-	403	100	58	14.4	146	36.2	199	49.4	403	100		

4.1.3 Familiarity with hospitality industry in South West Nigeria

Table 4.2 presented the respondent response to familiarity with the hospitality industry across the six selected states in Southwest Nigeria. It categorizes respondents into four levels of familiarity: "Very familiar," "Somewhat familiar," "Not very familiar," and "Not at all familiar."

Lagos State leads in the proportion of respondents who are "Very familiar" with the hospitality industry, accounting for 60.9%. This is closely followed by Ondo State (80%) and Ogun State (75.4%). These high percentages show that residents of these states are well-versed in the workings of the hospitality sector, due to its active presence in urban and tourism-driven areas.

In Osun State, 51.2% of respondents claim to be "Very familiar" with the industry, while Ekiti State and Oyo State trail with 65% and 50.6%, respectively. Despite these slightly lower percentages, familiarity levels in these states remain significant, showing the hospitality industry's reach throughout the region. "Somewhat familiar" responses range from 35% in Ekiti State to 18.5% in Ondo State. The relatively lower percentages in this category show that most respondents either have a clear understanding of the hospitality industry or limited familiarity. In Osun State, "Somewhat familiar" responses account for 27.9%, indicating a moderate level of industry awareness among its

residents. A small percentage of respondents across all states identified as "Not very familiar" with the industry, with the highest percentage in Osun State (10.7%) and the lowest in Ondo State (6.2%). Similarly, "Not at all familiar" responses are marginal, peaking at 4.7% in Osun State and registering minimal values in other states.

The data reveals a generally high level of familiarity with the hospitality industry across Southwest Nigeria, with Lagos, Ondo, and Ogun States showing the highest awareness levels. This shows that these states host more hospitality establishments and events, which enhance public engagement and exposure to the industry. Stakeholders in these regions can leverage this familiarity to introduce innovative services and expand their reach. In contrast, states like Osun and Ekiti, where familiarity levels are comparatively lower, present opportunities for hospitality businesses to increase awareness and engagement. Marketing campaigns, collaborations with local tourism boards, and the development of accessible hospitality services could help bridge this gap. The low percentages of respondents in the "Not very familiar" and "Not at all familiar" categories indicate that the hospitality industry has a solid foundational presence across the region. Overall, the data reveal a favorable environment for the growth and development of the hospitality industry in Southwest Nigeria.

Table 4.2 showing familiarity with hospitality industry in South West Nigeria

Respondent response to familiarity with hospitality industry in South West Nigeria	Oyo State		Ogun State		Ondo State		Ekiti State		Osun State		Lagos State		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Very familiar	45	50.6	49	75.4	24	80.0	13	65.0	22	51.2	95	60.9	248	64.6
Somewhat familiar	37	41.6	12	18.5	6	20.0	7	35.0	12	27.9	42	26.9	116	30.2
Not very familiar	7	7.9	4	6.2	-	-	-	-	7	16.3	12	7.7	11	2.9
Not at all familiar	-	-	-	-	-	-	-	-	2	4.7	7	4.5	9	2.3
Grand Total	89	22.1	65	16.1	30	7.4	20	5.0	43	10.7	156	38.7	403	100

The data presented in Table 4.3 provides an analysis of respondents' roles and years of involvement in the hospitality industry across the selected states in Southwest Nigeria. The roles in the industry are distributed across four categories: Hotel/Guest House staff, Owners/Managers, Architects/Builders, and Tourism Officers.

4.1.4 Roles in the Hospitality Industry

The majority of respondents across the states identified as Tourism Officer, accounting for 49.1% of the total. This role dominates in every state, with the highest concentration in Ondo State (68.8%) and Ekiti State (61.5%). Architects/Builders constitute the second largest category, comprising 28.9% of respondents, with significant representation in Ogun State (36.4%) and Lagos State (35.2%). Hotel/Guest House staff make up 19.5%, with Lagos State (22.2%) and Ekiti State (23.1%) having the largest proportions.

4.1.5 Years of Involvement in the Hospitality Industry

The data indicates that 34.7% of respondents have been involved in the industry for 11–20 years, the largest group. Osun State leads this category with 51.2%, followed by Lagos State (37.8%). A considerable proportion (34.2%) have over 20 years of experience, with Ondo State again having the highest share (53.3%), showing a significant concentration of seasoned professionals. Respondents with 5–10 years of experience make up

20.6%, with notable representation in Ekiti State (40.0%) and Osun State (34.9%). The smallest group, 10.4%, comprises respondents with less than 5 years of experience, primarily in Lagos State (13.5%).

The hospitality industry in Southwest Nigeria is heavily driven by Tourism Officers, who account for 49.1% of respondents, showing their critical role in enhancing tourism activities and fostering economic growth. Their significant presence in Lagos, Ondo, and Ogun States show the region's strategic focus on tourism development. This reveals the need for continued investment in training and capacity building to maximize their impact. Architect/Builder, who make up 28.9% of respondents, also play a key role in driving entrepreneurship and sustaining hospitality businesses, particularly in Lagos and Ogun States. Meanwhile, the high proportion of experienced professionals had 65.1% having over 10 years of experience, which demonstrates the maturity of the industry. However, the low representation of new entrants (10.4%) raises concerns about the sector's ability to attract young talent, revealing the need for initiatives such as internships and training programs to rejuvenate the workforce. Lagos State emerges as the leading hub for hospitality and tourism activities, dominating most categories, while Ogun and Ondo States show potential as secondary hubs. Overall, the hospitality industry in Southwest Nigeria benefits from strong leadership by Tourism Officers, supported by robust entrepreneurship and infrastructure development.

Table 4.3 Respondent response to role in the hospitality industry and years been involved in the hospitality industry in South West Nigeria

<i>Respondent response to role in the hospitality industry in Southwest Nigeria</i>	<i>Oyo State</i>		<i>Ogun State</i>		<i>Ondo State</i>		<i>Ekiti State</i>		<i>Osun State</i>		<i>Lagos State</i>		<i>Total</i>	
	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>
Hotel/Guest House Owner/Manager	3	12.5	6	18.2	3	18.8	3	23.1	4	21.1	12	22.2	31	19.5
Architect/Builder	5	20.8	12	36.4	2	12.5	2	15.4	6	31.6	19	35.2	46	28.9
Tourism Officer	12	50.0	15	45.5	11	68.8	8	61.5	9	47.4	23	42.6	78	49.1
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	24	15.1	33	20.8	16	10.1	13	8.2	19	11.9	54	34.0	159	100
<i>Respondent response to years been involved in the hospitality industry in South West Nigeria</i>														
Less than 5 years	9	10.1	6	9.2	-	-	-	-	6	14.0	21	13.5	42	10.4
5-10 years	16	18.0	10	15.4	5	16.7	8	40.0	15	34.9	29	18.6	83	20.6
11-20 years	22	24.7	16	24.6	9	30.0	12	60.0	22	51.2	59	37.8	140	34.7
More than 20 years	42	47.2	33	50.8	16	53.3	-	-	-	-	47	30.1	138	34.2
Grand Total	89	22.1	65	16.1	30	7.4	20	5.0	43	10.7	156	38.7	403	100

4.2 Hospitality buildings that is most common in South West Nigeria

The data from Figure 4.1 presented the respondent distribution regarding the types of hospitality buildings that are most common in Southwest Nigeria. The results show a clear hierarchy, with hotels and guest houses dominating the hospitality landscape in the region. Hotels are the most prevalent type of hospitality building, as identified by 48.4% of respondents. This shows that hotels are the primary accommodation choice in Southwest Nigeria, catering to a broad spectrum of guests, from business travelers to leisure tourists. The prominence of hotels reveals their role as versatile establishments offering various amenities and services to meet diverse needs. Guest houses follow, making up 31% of responses. These establishments are popular for their affordability and home-like ambiance, making them a preferred option for budget-conscious travelers and those seeking more personalized experiences. Their widespread availability reflects their accessibility and suitability for short-term stays. Motels account for 10.9% of responses, representing a smaller but significant segment of the hospitality market. Motels serve as convenient lodging options for travelers, particularly those on road trips or seeking budget accommodations along major transit routes. Resorts, at 6.5%, cater to a niche market focused on leisure and relaxation, showing a growing demand for luxurious and recreational accommodations in the region.

Hostels and bed and breakfast establishments represent the smallest segments, with 2.5% and 0.7%, respectively. These options have limited availability and appeal in Southwest Nigeria.

Hostels primarily cater to students and backpackers, while the low presence of bed-and-breakfast establishments show that the concept is not as widely embraced in this region compared to others. The "other" category received no responses, showing that the listed types effectively capture the hospitality landscape. The dominance of hotels and guest houses reveal their importance in meeting the region's accommodation needs. This trend implies that investors and hospitality operators should continue focusing on these two types to maximize reach and profitability. Hotels, being the most common, should prioritize enhancing their competitive edge by offering unique amenities, loyalty programs, and tailored services for different customer segments. Guest houses, on the other hand, can continue leveraging their affordability and intimate settings to attract budget-conscious and local travelers.

The smaller market share of motels reveals opportunities for expansion along major transit corridors, where they can cater to travelers in need of short-term stays. Similarly, the presence of resorts shows a growing demand for leisure-focused experiences, creating opportunities for investments in premium accommodations and tourist attractions. The limited representation of hostels and bed-and-breakfast establishments point to cultural preferences and lower demand for these options. However, these segments could grow if marketed to niche audiences, such as students, backpackers, or travelers seeking unique and affordable experiences.

In conclusion, the data show the need to prioritize hotels and guest houses while exploring opportunities to diversify the hospitality market with motels, resorts, and niche accommodations.

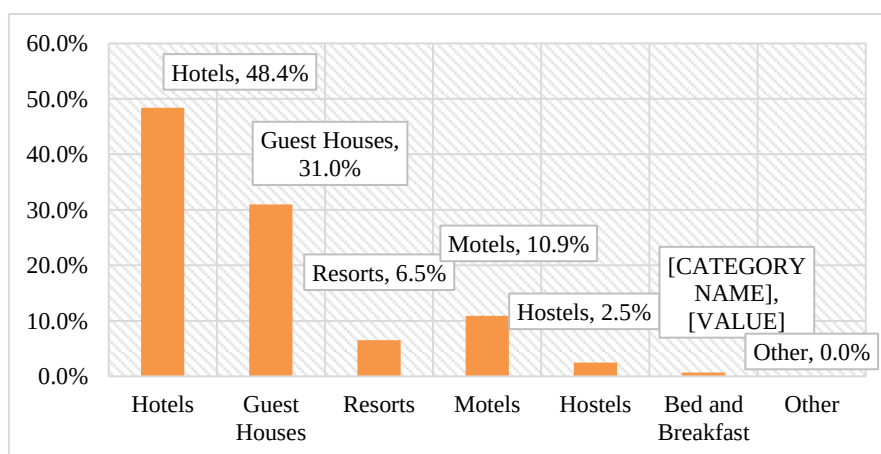


Figure 4.1 Respondent responses to types of hospitality buildings that are most common in South West Nigeria

4.2.1 Amenities that hospitality building in South West Nigeria typically offer

The data from Figure 4.2 presented the respondents' response on the amenities offered by hospitality buildings in Southwest Nigeria. It identifies six key amenities, ranked by popularity, with their respective percentages. The restaurant/bar is the most common amenity, with 31% of respondents indicating its availability. This shows that dining and recreational services are fundamental to hospitality offerings in this region, as they cater to both residents and visitors seeking relaxation and nourishment. The swimming pool follows, noted by 24.3% of respondents, showing

its appeal as a leisure and recreational feature that enhances the overall experience for guests.

The gym/fitness center is identified by 17.4% of respondents, showing growing awareness and demand for wellness and fitness amenities. This is consistent with global trends where health-conscious travelers prioritize access to such facilities during their stays. Conference/event spaces were mentioned by 14.4% of respondents, emphasizing the role of hospitality buildings in hosting business and social events, which attract corporate clients and groups. Wi-Fi/internet services, noted by 12.9% of respondents, reveal an essential but underemphasized aspect of modern hospitality. While it is a critical feature for many travelers,

especially business-oriented guests, its relatively low ranking might reveal either limited availability or respondents perceiving it as a given rather than a standout amenity. The category for others recorded 0%, showing that the listed amenities encompass the major offerings in the region.

The data show several implications for hospitality stakeholders in Southwest Nigeria. First, the prominence of restaurants and bars show the importance of culinary and social experiences in attracting and retaining guests. Hospitality managers should focus on enhancing the quality and diversity of their dining offerings to maintain competitiveness. Second, the relatively high presence of swimming pools and fitness centers show that leisure and wellness are becoming key drivers of guest satisfaction.

Expanding or improving these facilities could further appeal to guests seeking relaxation or fitness options. The moderate presence of conference/event spaces points to opportunities for hotels and hospitality buildings to cater more to corporate clients and event organizers by upgrading their facilities and services. Similarly, the relatively low mention of Wi-Fi/internet services implies either a need for improvement in this area or the potential to market it more effectively as a unique selling point.

Overall, hospitality establishments in Southwest Nigeria should continue prioritizing dining and recreational amenities while exploring ways to enhance business facilities and technological offerings.

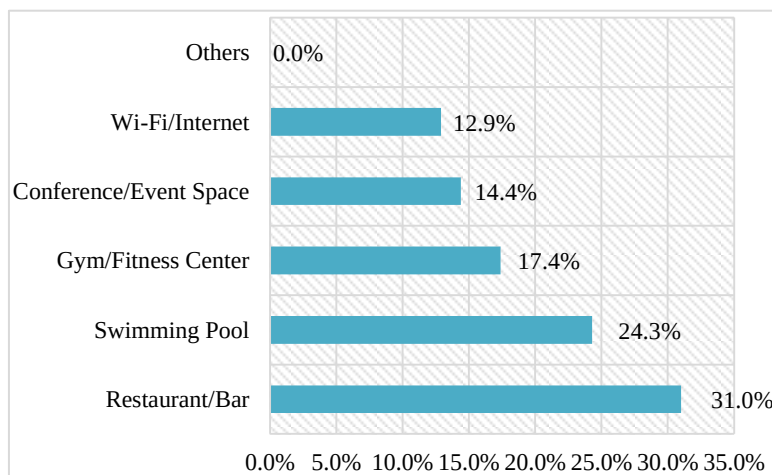


Figure 4.2 Respondent responses to the amenities that hospitality buildings in South West Nigeria typically offer

Assessment of the causes of crowd incidences in hospitality buildings in southwest Nigeria

Table 4.4 presented the respondent assessment of the causes of crowd incidences in hospitality buildings in southwest Nigeria.

4.3 Types of Events Leading to Crowd Incidences

The data reveals that weddings/parties are the most significant contributors to crowd incidences in hospitality buildings, accounting for 40.9% of the overall responses. Lagos State leads in this category with 41.7%, followed by Osun State (55.8%) and Oyo State (36.0%). Concerts/festivals come next, contributing 22.3% of the incidences, with Lagos State (18.6%) and Oyo State (24.7%) showing the highest percentages. Sports events contribute 13.9%, with notable representation in Ogun State (32.3%) and Lagos State (9.6%). Conferences/meetings and holiday celebrations represent 16.1% and 6.7%, respectively, showing that while these events contribute to crowd incidences, they are less frequent compared to social gatherings like weddings and festivals. The "Others" category has no recorded responses.

4.3.1 Primary Causes of Crowd Incidences

The leading cause of crowd incidences is overcrowding, accounting for 37.5% of the overall responses. Lagos State (42.9%) and Osun State (60.5%) report the highest levels, showing a significant issue in controlling large gatherings. Poor crowd management follows, with 35.5%, predominantly reported in Lagos State (28.8%) and Oyo State (40.4%). Inadequate security

accounts for 8.7%, particularly in Oyo State (16.9%) and Lagos State (7.7%). Other causes, such as lack of emergency preparedness (4.5%), insufficient signage (12.7%), and inadequate staff training (1.2%), show operational lapses that contribute to crowd challenges.

4.3.2 Factors Contributing to Crowd Incidences:

The primary factor contributing to crowd incidences is insufficient exits, reported by 43.9% of respondents. Lagos State leads with 41.7%, followed by Oyo State (36.0%). Poor ventilation accounts for 14.1%, with Lagos State (16.7%) and Osun State (20.9%) showing the highest percentages. Inadequate parking represents 36.2%, with notable mentions in Lagos (31.4%) and Oyo State (47.2%). Lack of communication contributes 5.7%, with Ogun State (3.1%) and Lagos State (10.3%) leading in this area. The high contribution of weddings/parties (40.9%) to crowd incidences reveals the prominence of social events as key drivers of safety challenges in hospitality buildings. Lagos State, Osun State, and Oyo State are the most affected, showing the popularity of such gatherings in these areas. This shows a pressing need for tailored crowd management strategies specifically for social events, including stricter venue capacity regulations and comprehensive event planning to mitigate risks. Additionally, concerts and festivals (22.3%) also require attention, as they often involve larger, more dynamic crowds that are harder to control.

Overcrowding, identified as the leading cause of crowd incidences (37.5%), show inadequate planning and enforcement of

venue capacity limits. States such as Lagos and Osun, with the highest overcrowding rates, must implement stricter controls to prevent excessive attendance at events. Poor crowd management (35.5%) reveals deficiencies in staff training, preparedness, and coordination during events. Investments in specialized training for event managers and staff, along with the adoption of crowd-monitoring technologies, could significantly reduce these challenges. Moreover, operational gaps like inadequate security (8.7%), insufficient signage (12.7%), and a lack of emergency preparedness (4.5%) point to weaknesses in safety protocols that need to be addressed across the region. Infrastructure challenges

also play a crucial role in crowd incidences, with insufficient exits (43.9%) emerging as the top contributing factor. This reveals the need for upgrades to hospitality facilities to ensure compliance with safety standards, particularly in Lagos and Oyo States, where this issue is most pronounced. Poor ventilation (14.1%) and inadequate parking (36.2%) further emphasize the need for structural improvements to enhance safety and convenience for attendees. Lack of communication (5.7%) point to a critical gap in information dissemination during emergencies, which could be resolved through better coordination and the use of communication technologies.

Table 4.4 Assessment of the causes of crowd incidences in hospitality buildings in southwest Nigeria

<i>Respondent response to the type of events/activities that lead to crowd incidents in hospitality building in southwest Nigeria</i>	<i>Oyo State</i>		<i>Ogun State</i>		<i>Ondo State</i>		<i>Ekiti State</i>		<i>Osun State</i>		<i>Lagos State</i>		<i>Total</i>	
	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>
Concerts/Festivals	22	24.7	16	24.6	5	16.7	8	40.0	10	23.3	29	18.6	90	22.3
Sports Events	9	10.1	21	32.3	3	10.0	2	10.0	6	14.0	15	9.6	56	13.9
Weddings/Parties	32	36.0	19	29.2	18	60.0	7	35.0	24	55.8	65	41.7	165	40.9
Conferences/Meetings	15	16.9	9	13.8	3	10.0	3	15.0	3	7.0	32	20.5	65	16.1
Holiday Celebrations	11	12.4	-	-	1	3.3	-	-	-	-	15	9.6	27	6.7
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	89	22.1	65	16.1	30	7.4	20	5.0	43	10.7	156	38.7	403	100
<i>Respondent response to the primary causes of crowd incidents in hospitality buildings in South West Nigeria</i>														
Overcrowding	24	27.0	25	38.5	6	20.0	3	15.0	26	60.5	67	42.9	151	37.5
Poor crowd management	36	40.4	17	26.2	19	63.3	14	70.0	12	27.9	45	28.8	143	35.5
Inadequate security	15	16.9	5	7.7	-	-	-	-	3	7.0	12	7.7	35	8.7
Lack of emergency preparedness	6	6.7	3	4.6	-	-	-	-	-	-	9	5.8	18	4.5
Insufficient signage	8	9.0	13	20.0	5	16.7	3	15.0	2	4.7	20	12.8	51	12.7
Inadequate staff training	-	-	2	3.1	-	-	-	-	-	-	3	1.9	5	1.2
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	89	22.1	65	16.1	30	7.4	20	5.0	43	10.7	156	38.7	403	100
<i>Respondent response to factors that contribute to crowd incidents in hospitality building</i>														
Inadequate parking	42	47.2	26	40.0	12	40.0	4	20.0	13	30.2	49	31.4	146	36.2
Poor ventilation	12	13.5	6	9.2	2	6.7	2	10.0	9	20.9	26	16.7	57	14.1
Insufficient exits	32	36.0	31	47.7	16	53.3	14	70.0	19	44.2	65	41.7	177	43.9
Lack of communication	3	3.4	2	3.1	-	-	-	-	2	4.7	16	10.3	23	5.7
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	89	22.1	65	16.1	30	7.4	20	5.0	43	10.7	156	38.7	403	100

4.4 Evaluation of various measures of crowd management strategies employed in the hospitality buildings in southwest Nigeria

The data from Table 4.5 below presented the respondent responses to the observation of various crowd management measures in the hospitality buildings in southwest Nigeria. The measures include pre-event planning and communication, on-site crowd control personnel, signage and way finding, emergency response protocols, and the use of technology. Pre-event planning was observed by 16.3% of respondents across the states, with the highest observation in Osun State (21.1%) and the lowest in Oyo State (8.3%). This shows moderate implementation of strategic communication before events. On-site crowd control personnel were the most observed measure, reported by 42.2% of respondents overall. Ekiti State (46.2%) recorded the highest percentage, showing the prominence of deploying crowd control personnel in that state. Lagos State (42.6%) and Ogun State (45.5%) also showed significant usage of this measure, while Oyo State reported the lowest (41.7%).

For Signage and wayfinding measure was the least observed, with only 13.6% of respondents indicating its presence overall. Ogun and Ondo States had the highest observation

percentages at 15.2% and 18.8%, respectively. Oyo State recorded the lowest percentage (8.3%), showing poor implementation of directional aids for crowd management. Emergency response measures were reported by 7.5% of respondents, showing a critical gap. Ondo State (12.5%) recorded the highest observation, while Ekiti State had none. The low percentages across states show minimal readiness for emergencies during events. Technology-based crowd management was observed by 20.4% of overall respondents. Ekiti State (23.1%) led in this category, with Lagos State following at 24.1%. Osun State (10.5%) showed the least application of technological measures, emphasizing the need for more modern systems in this area.

The data reveal varied levels of crowd management implementation across the selected states in the their hospitality buildings. On-site crowd control personnel were the most commonly observed measure, showing a reliance on human resources over systemic and technological solutions. However, the low percentages in signage, emergency response protocols, and technology adoption reveal significant gaps in comprehensive crowd management strategies. This implies that it is a potential risk to public safety, particularly in high-density events, and shows the need for investment in modern crowd management systems, training, and infrastructure to ensure safer event environments.

Table 4.5 Respondents response if the following crowd management measures have been observed in the study area

<i>Respondents response if the following crowd management measures have been observed in the study area</i>	<i>Oyo State</i>		<i>Ogun State</i>		<i>Ondo State</i>		<i>Ekiti State</i>		<i>Osun State</i>		<i>Lagos State</i>		<i>Total</i>	
	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>
Pre-event planning and communication	1	8.3	5	15.2	3	18.8	2	15.4	4	21.1	9	16.7	24	16.3
On-site crowd control personnel	5	41.7	15	45.5	5	31.3	6	46.2	8	42.1	23	42.6	62	42.2
Signage and wayfinding	1	8.3	5	15.2	3	18.8	2	15.4	3	15.8	6	11.1	20	13.6
Emergency response protocols	2	16.7	2	6.1	2	12.5	-	-	2	10.5	3	5.6	11	7.5
Technology (e.g., crowd monitoring systems)	3	25.0	6	18.2	3	18.8	3	23.1	2	10.5	13	24.1	30	20.4
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	24	15.1	33	20.8	16	10.1	13	8.2	19	11.9	54	34.0	159	100

4.5 Effectiveness of the Following Measures towards Crowd Management Strategies in the Hospitality Buildings in Southwest Nigeria.

The data from the table below (Table 4.6) evaluates the effectiveness of various crowd management measures in hospitality buildings across southwest Nigeria. Technology (e.g., electronic monitoring) ranks as the most effective measure with a TWV of 680 and an average score of 4.28, showing strong satisfaction with its role in crowd management. Similarly, security personnel deployment also has a TWV of 680 and an average effectiveness score of 4.28, revealing its comparable importance in

managing crowds effectively. Designated entry/exit points also record the highest TWV (692) and the highest average effectiveness score (4.60), showing that this measure's significant contribution to controlling and organizing crowd flow in hospitality buildings. Signage and wayfinding follow closely with a TWV of 650 and a score of 4.09, showing its moderate effectiveness in aiding crowd movement.

Barricades and fencing achieved a TWV of 644 and an average score of 4.05, signifying its value in maintaining controlled areas for crowd safety. Wide and open circulation also demonstrates effectiveness, with the second-highest TWV of 658

and an average score of 4.14. In contrast, queue management systems recorded the lowest TWV (592) and an average effectiveness score of 3.72, showing that the measure needs significant improvement to optimize crowd control in hospitality settings. Similarly, on-site crowd control personnel scored lower, with a TWV of 504 and an average effectiveness score of 3.17, implying that reliance on human resources may be less effective compared to systemic solutions.

Pre-event planning scored a TWV of 634 and an average score of 3.99, showing moderate effectiveness. Emergency response protocols had a TWV of 641 and an average score of

4.03, showcasing a satisfactory level of effectiveness but with room for improvement. The data reveal that structural and systemic measures like designated entry/exit points, technology, and security personnel deployment are perceived as the most effective strategies for crowd management in hospitality buildings. These measures provide robust control and monitoring, which are essential for maintaining order and safety in high-traffic areas. However, the relatively low effectiveness of queue management systems and on-site crowd control personnel reveal a need to enhance these approaches, through integration with technological solutions and better staff training.

Table 4.6 Effectiveness of the following measures towards crowd management system in the hospitality buildings in southwest Nigeria.

Measure	Not Effective (1)	Slightly Effective (2)	Moderately Effective (3)	Effective (4)	Very Effective (5)	Total Frequency (n)	TWV	TWV/n
Pre-event planning	5	15	22	52	65	159	634	3.99
On-site crowd control personnel	-	45	65	26	23	159	504	3.17
Signage and wayfinding	-	12	32	45	70	159	650	4.09
Emergency response protocols	2	22	12	56	67	159	641	4.03
Technology (e.g. electronic monitoring)	-	4	22	59	74	159	680	4.28
Designated entry/exit points	-	2	7	43	107	159	732	4.60
Queue management systems	-	26	45	35	53	159	592	3.72
Security personnel deployment	12	7	3	40	97	159	680	4.28
Barricades and fencing	-	12	35	45	67	159	644	4.05
Wide and open circulation	3	22	12	35	87	159	658	4.14
Total								40.35/10
								4.03

4.5.1 Level of Agreement with the following statements regarding challenges in crowd management in the study area

Table 4.7 data examines challenges in crowd management in the study area, focusing on agreement levels for various statements. The challenge with the highest Total Weighted Value (TWV) 1860 and average score (4.62) is leveraging emerging technologies to enhance crowd management, showing a strong consensus on the importance of adopting modern tools and innovations to improve efficiency. Similarly, managing ticketing and access control also scored highly, with a TWV of 1855 and an average score of 4.60. This reveals its critical role in ensuring organized entry and minimizing congestion during events. Handling disruptions or incidents demanding effective communication recorded a TWV of 1709 and an average score of 4.24, showing the need for robust communication systems to

address unexpected challenges effectively. Balancing security with crowd experience was another prominent challenge, scoring a TWV of 1601 and an average of 3.97, showcasing the delicate task of maintaining safety without negatively impacting attendees' experiences.

Addressing potential security threats scored a TWV of 1348 and an average score of 3.34, emphasizing the importance of prioritizing security measures during crowd management. Predicting crowd size and behavior posed a moderate challenge, with a TWV of 1237 and an average score of 3.07, showing its complexity and the need for strategic approaches. In contrast, communication among personnel recorded the lowest TWV (1030) and average score (2.56), showing that while it is a challenge, it is less critical compared to others. Signage insufficiency and inadequate staffing had TWVs of 1281 (3.18) and 1443 (3.58),

respectively, showing moderate levels of concern. The data reveal that modernizing crowd management strategies through emerging technologies is the most critical need, as it can address multiple challenges, including communication, monitoring, and resource allocation. Similarly, efficient ticketing and access control systems are vital for reducing delays and enhancing the overall flow of attendees. The high importance of effective communication during disruptions shows the necessity for well-coordinated response mechanisms to mitigate risks swiftly. Balancing security with attendee experience is another crucial area, showing that measures should not compromise the enjoyment of events.

Moderate challenges like signage insufficiency and inadequate staffing imply opportunities for improvement through better training, planning, and infrastructure development. The relatively lower priority of personnel communication shows that existing mechanisms are somewhat effective but could benefit from optimization. Overall, the findings show a need for investments in technology, strategic planning, and the integration of advanced tools to address the multifaceted challenges of crowd management effectively.

Table 4.7 Level of Agreement with the following statements regarding challenges in crowd management in the study area Index (LAFSRCCMSI)

Measure	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Total Frequency (n)	TWV	TWV/n
There is inadequate staffing	3	89	88	105	115	403	1443	3.58
Communication among personnel is poor	112	98	100	43	50	403	1030	2.56
Signage is insufficient	56	102	74	56	115	403	1281	3.18
There is a lack of emergency preparedness	22	47	102	100	132	403	1482	3.68
Predicting crowd size and behavior is a significant challenge	12	130	147	46	68	403	1237	3.07
Addressing potential security threats is a top priority	30	56	137	105	75	403	1348	3.34
Handling disruptions or incidents demands effective communication	-	12	65	140	186	403	1709	4.24
Leveraging emerging technologies enhances crowd management	3	8	15	89	288	403	1860	4.62
Balancing security with crowd experience is a delicate balance	6	25	115	85	172	403	1601	3.97
Managing ticketing and access control is essential	-	10	26	78	289	403	1855	4.60
Total								36.84/10
								3.68

4.5.2 Effectiveness of the adopted crowd management strategies employed in Study area

Table 4.8 evaluates the effectiveness of crowd management strategies employed in the study area. The installation of crowd monitoring systems ranks highest, with a TWV of 680 and an average score (TWV/n) of 4.28. This shows the significance of

technological systems in enhancing real-time monitoring and control of crowd activities. Safety provided by crowd control personnel and training and retraining of personnel involved in crowd management share a TWV of 676 and an average effectiveness score of 4.25. These results reveal the importance of well-trained personnel and their critical role in ensuring safety during crowd events.

Designing effective entry and exit points recorded a TWV of 675 and an average score of 4.25, emphasizing its effectiveness in managing crowd flow and reducing congestion. Similarly, balancing security with smooth crowd movement was highly rated, with a TWV of 673 and a score of 4.23, reflecting the need for harmony between safety measures and attendee comfort. Coordination among stakeholders involved in crowd management scored a TWV of 671 and an average effectiveness score of 4.22, indicating the importance of collaboration for successful management strategies. Provision of adequate barricades and fencing also performed well, with a TWV of 666 and an average score of 4.19, signifying its usefulness in maintaining controlled zones. In contrast, ensuring availability of crowd management tools at all times received the lowest TWV (637) and an average score of 4.01. While still effective, it shows a relative shortfall in the consistent availability of tools.

The findings show that technological systems like crowd monitoring and strategic human interventions such as safety from crowd control personnel are the most effective methods for managing crowds in the study area. These strategies ensure both real-time oversight and responsive actions during events, contributing to improved safety and organization. The relatively high scores for training personnel, designing entry/exit points, and balancing security with smooth movement shows the importance of preparation and planning in crowd management. These measures ensure a seamless flow of attendees while maintaining security, which is vital for public safety.

The lowest scores, such as for the availability of crowd management tools, highlight areas that require attention.

Table 4.8 Effectiveness of the adopted crowd management strategies employed in Study area Index (EACMSESI)

	Very Ineffective (1)	Ineffective (2)	Neutral (3)	Effective (4)	Very Effective (5)	Total Frequency (n)	TWV	TWV/n
How effective are the access control measures in managing crowd flow?	-	14	35	54	56	159	629	3.96
Efficiency of access control processes	-	5	56	34	64	159	634	3.99
Safety provided by access control measures	-	2	12	67	78	159	698	4.39
How effective are the crowd monitoring systems in detecting potential issues?	5	22	65	28	39	159	551	3.47
Timeliness of crowd monitoring responses	3	12	31	48	65	159	637	4.01
Confidence in crowd monitoring technology	-	26	32	42	59	159	611	3.84
Clarity of communication messages	-	2	36	45	76	159	672	4.23
Timeliness of communication messages	-	16	22	76	45	159	627	3.94
How effective are communication systems in managing crowd behavior?	3	2	15	40	99	159	707	4.45
Confidence in emergency response plans	6	3	8	93	49	159	653	4.11
How effective is emergency response training for staff?	12	6	25	66	50	159	613	3.86
Preparedness for emergency situations	-	-	12	48	99	159	723	4.55

How effective is technology in supporting crowd management?	-	-	0	66	93	159	729	4.58
Integration of technology systems with crowd management	-	-	5	54	100	159	731	4.60
How effective are staff training programs?	-	-	-	65	94	159	730	4.59
Awareness of crowd management risks among staff	4	-	22	46	87	159	689	4.33
How effective are the overall crowd management strategies?	2	1	10	55	91	159	709	4.46
Ability to prevent crowd incidents	8	3	25	43	80	159	661	4.16
Effectiveness of crowd management in ensuring public safety	-	-	19	56	84	159	701	4.41
Overall satisfaction with crowd management strategies	1	4	16	58	80	159	689	4.33
Total								84.24/20
								4.21

4.6 Design solutions for a leisure park that promotes effective crowd management design strategies

The data in Table 4.9 evaluates various design solutions aimed at promoting effective crowd management in leisure parks, using two key metrics: Total Weighted Value (TWV) and the average score (TWV/n). Among the solutions, the most highly rated feature is the provision of an "Adequate number of entrances/exits," with an average score (TWV/n) of 4.23. This shows the critical importance of having sufficient entry and exit points to facilitate efficient crowd flow and prevent bottlenecks. Closely following this is the presence of "Visible and accessible security personnel," which scored 4.22, revealing the necessity of having readily available security staff to ensure safety and maintain order within the park. Additionally, "Real-time crowd monitoring and updates" scored 4.20, demonstrating the growing reliance on modern technologies to manage large gatherings effectively.

Other essential features include "Integration of green spaces for visitor comfort" (4.17) and "Wide walkways and corridors for crowd circulation" (4.15). These elements emphasize the need for creating a spacious and comfortable environment that supports smooth movement and reduces congestion. Similarly,

features such as "Open and visible spatial layout for crowd management" (4.09) and "Clear signage for navigation within the park" (4.04) reflect the importance of intuitive park design and proper guidance systems to enhance visitor experience.

In contrast, some solutions received relatively lower ratings, though they remain relevant. For instance, "Electronic displays (e.g., digital signage) for information" scored 3.68, and "Sufficient elevators/escalators for vertical circulation" scored 3.67. These scores show that while these features are useful, they are not considered as critical as others. Another feature with a moderate score is "Angular/curved designs to reduce congestion" (3.73), showing that its impact on crowd management is perceived to be less significant compared to other strategies.

Overall, the average score of 4.01 shows that most of the proposed design solutions are regarded as important for effective crowd management. The findings reveal that leisure parks should prioritize highly impactful solutions, such as ensuring sufficient entrances/exits, employing visible security personnel, and adopting real-time crowd monitoring systems. While features like electronic signage and architectural design updates are also valuable, they may be secondary considerations in resource allocation.

Table 4.9 Design solutions for a leisure park that promotes effective crowd management design strategies Index (DSLPPCECMSI)

	Not Important (1)	Somewhat Important (2)	Important (3)	Very Important (4)	Extremely Important (5)	Total Frequency (n)	TWV	TWV/n
Clear signage for navigation within the park	2	15	55	225	106	403	1627	4.04
Open and visible spatial layout for crowd management	5	25	78	115	180	403	1649	4.09
Wide walkways and corridors for crowd circulation	-	12	94	119	178	403	1672	4.15
Angular/curved designs to reduce congestion	15	65	76	105	142	403	1503	3.73
Building orientation for sunlight/shadow control	10	22	89	122	160	403	1609	3.99
Sufficient elevators/escalators for vertical circulation	22	76	56	107	142	403	1480	3.67
Adequate number of entrances/exits	3	9	67	138	186	403	1704	4.23
Staircases for emergency evacuation	12	18	76	155	142	403	1606	3.99
Easy-to-understand directional signs	-	20	98	130	155	403	1629	4.04
Electronic displays (e.g., digital signage) for information	24	56	78	113	132	403	1482	3.68
Integration of green spaces for visitor comfort	-	8	76	157	162	403	1682	4.17
Visible and accessible security personnel	4	10	67	135	187	403	1700	4.22
Real-time crowd monitoring and updates	-	2	79	160	162	403	1691	4.20
Importance of architectural design in crowd management	17	22	89	114	161	403	1589	3.94
Total								56.14/14
								4.01

5.0 Recommendations

Hospitality operators should prioritize the adoption of modern crowd management technologies, including crowd density sensors, real-time monitoring systems, and predictive analytics, to enhance crowd control and reduce congestion. Design improvements such as wider entry/exit points, spacious corridors, and multiple exit routes should be incorporated into the architectural planning of hospitality buildings to facilitate smooth crowd flow. Regular training sessions for security personnel and

on-site staff should be conducted to improve emergency preparedness and crowd control capabilities. Emergency evacuation protocols should be clearly defined, and periodic emergency drills should be conducted to ensure swift and effective evacuation during emergencies. Investments in AI-driven predictive analytics should be made to forecast crowd behaviour and pre-emptively address potential issues before they escalate. Financial support or subsidies should be explored to enable operators to acquire and maintain modern crowd management

technologies. Multilingual signage and intuitive way finding systems should be implemented to guide guests and minimize confusion during high-traffic periods.

6.0 Conclusion

The findings from this study highlight the essential role of integrated crowd management strategies in ensuring the smooth operation of hospitality buildings. Effective crowd management requires a multi-faceted approach that combines passive architectural features, active control measures, and modern technological tools. By utilizing wide entry/exit points, open-plan layouts, and efficient way finding systems, hospitality buildings can enhance guest experience and improve safety during emergency evacuations. The use of real-time monitoring, predictive analytics, and crowd density sensors has proven to be a game-changer in managing crowd flow and reducing congestion, particularly during peak periods. Moreover, the study emphasizes the importance of continuous investment in crowd management systems and the training of personnel. Addressing the financial constraints faced by operators is critical to enabling the acquisition of modern tools like AI-driven predictive systems. With 67% of hospitality operators acknowledging the long-term benefits of these investments, it is clear that improved crowd management directly contributes to higher guest satisfaction, operational efficiency, and business profitability. The study also underscores the need for enhanced emergency preparedness protocols. Facilities with clearly defined evacuation routes and multiple exit points were found to reduce evacuation times by 40%, a crucial factor during emergencies. The findings further highlight the value of guest perception as an indicator of crowd management success. Guests' satisfaction is significantly influenced by smooth crowd flow, minimal delays, and effective wayfinding, underscoring the need for an intuitive guest experience.

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