

Users' Satisfaction with Design Strategies for Enhancing Customers' Experience in Selected Restaurants in Lagos, Nigeria

Deborah I. Anosike¹ Anthony B. Sholanke²

^{1,2} Department of Architecture, Covenant University, Ota, Ogun State, Nigeria

Abstract:- Restaurants are spaces that no longer exist for dining alone, but where people visit for pleasurable activities. The design of a restaurant plays a crucial role in creating a welcoming ambiance, optimizing functionality, and enhancing the dining experience. This study examined users' satisfaction with design strategies for improving customers' experience in selected restaurants in Lagos, Nigeria, to identify areas that require an uptrend toward developing viable eateries that meet users' expectations in the study area. The study adopted both qualitative and quantitative research approaches. Data was gathered by observation from four selected restaurants and 676 patrons across the selected restaurants with a close-ended structured questionnaire. The data was analysed by content analysis and with Statistical Product Service Solutions software. The results were presented descriptively with the use of tables and figures. The findings revealed that the users are largely affected by: lighting; walls, floors, and ceiling material selection; and colour design. The study recommends that designers create a pleasant atmosphere by prioritizing: effective lighting arrangements; thoughtful interior and exterior colour schemes; quality interior layouts; and carefully selecting finishing materials for walls, floors, and ceilings, to create an ambiance conducive to patrons' comfort. The study findings are beneficial for improving users' experience.

Keywords: Restaurants, Design Strategies, Service Delivery, Users' Satisfaction, Users' Experience, Nigeria.

1. Introduction

A restaurant is a venue where customers purchase food and beverages, typically comprising two distinct areas: the public front section, which includes dining and service areas, and the private back section reserved for staff, including the kitchen and storage facilities. Often, architects and interior designers focus on the front entrance, while food service experts handle the back entrance. These two perspectives converge at the swinging door connecting both areas (Ghimire, 2012). Recent studies present that eating in restaurants is more of a pleasure activity than a necessity (Hyldelund, Frederiksen, Byrne, and Andersen, 2022; Batat, 2019; Therkelsen, 2015; Astuti and Hanan, 2012).

Restaurant architecture should endure and fully serve its purpose, yet design strategies affecting user satisfaction remain understudied. Existing research focuses on lighting, ventilation, and interior design but overlooks vital sustainability aspects like sound, HVAC, materials, and layout, all of which significantly impact user satisfaction. Some of these studies include *Interior Design: Public Perceptions versus Professional Actualities* (Varnedoe, 2020); *The Effects of Artificial Lighting on Visual Task Efficiency in Enclosed Spaces without Daylight* (Ünsal, 2018); *Study of Indoor Air Quality Level in Various Restaurants in Saudi Arabia* (El-Sharkawy and Javed, 2018). It is on this note that this study focused on issues relating to users' satisfaction in the development of restaurants.

Consequently, this study investigates customer satisfaction with design strategies in Lagos, Nigeria's restaurants, aiming to identify areas for improvement in creating viable eateries that meet user expectations. To achieve the aim, four objectives were set. They include:

- i. to identify the strategic design characteristics of the selected restaurants;
- ii. to examine the relevant profile of the customers of the selected restaurants;
- iii. to examine users' satisfaction with design strategies for enhancing customers' experience; and
- iv. to determine the design strategy that affects users' satisfaction levels the most.

This study extracted key design strategies for user satisfaction from the literature, covering lighting, colour, sound, HVAC, materials, and layout. It offers valuable insights into restaurant satisfaction in Lagos, Nigeria.

The scope of this study focuses on assessing user satisfaction with design strategies in four specific restaurants in Lagos, Nigeria. Selection criteria include being standalone, purpose-built restaurants serving both local and continental dishes, with a seating capacity of over 100, attracting a substantial daily customer base exceeding 200 persons. The justification for this study lies in the need to enhance patrons' dining experiences within restaurants in the study area. It also promotes the eleventh goal of the Sustainable Development Goals (SDGs) and encourages the development of safe, inclusive, and resilient communities and cities that are sustainable. The study is beneficial for guiding restaurant owners, designers, and stakeholders towards effective design decisions that result in enhancing customers' satisfaction, thereby benefiting both the business and the dining public.

2. Literature Review

2.1 The Concept of Restaurant

Traditionally, restaurants provided dining services on-site, preparing and serving food and drinks for a fee. Today, they have evolved into vibrant centers of culinary and social experiences, where people gather to savour expertly crafted meals and beverages (Ryan and Brown, 2023). Restaurants extend beyond nourishment, providing a platform for cultural exploration and life's celebrations. Customers expect an immersive experience where ambiance, service, and environment enhance enjoyment. Meeting these expectations fosters lasting customer relationships, transcending mere transactions (Grönroos, 2018). In the realm of gastronomy, user' satisfaction is the target. A satisfied diner is one who not only delights in the culinary offerings but also revels in the meticulously crafted ambiance and seamless service. To achieve this, understanding the diverse needs of the users and aligning every element of the restaurant experience to meet those needs (Rajput and Gahfoor, 2020).

2.2 Development of Restaurant Business in Nigeria

Organized food businesses with restaurant-like characteristics have historical roots in Nigeria, notably in locations such as Lagos. Street food vending, initially a periodic activity during market days, gained momentum and became a daily business by the 1870s. Over time, it expanded as hawkers offered various cooked and roasted delicacies. By the 1940s, the street food industry had evolved into a profitable venture, even extending its presence to school environments to cater to students and teachers (Ogunsanya, 2014). Due to increasing demand, the street food industry evolved from roadside stalls to organized ventures in strategically located sheds, food kiosks, and canteens, commonly known as "Mama Put" in the southwestern region of Nigeria. These spots offered a variety of regional dishes at budget-friendly prices (Food Business, 2015).

The Nigerian restaurant scene has evolved significantly, with the emergence of the Quick Service Restaurant (QSR) concept exemplified by Mr. Biggs in the 1980s. Owned by the United Africa Company of Nigeria (UAC), Mr. Bigg's has expanded to over 131 locations in Nigeria and Ghana, reflecting the industry's growth and appeal to domestic and international entrepreneurs (Mustapha, Fakokunde, and Awolusi, 2021).

2.3 Economic Importance of Restaurants

Restaurants are integral to the service sector, contributing significantly to the economy by creating jobs, generating revenue, and stimulating various industries (Foris, Popescu, and Foris, 2017). They are labour-intensive, employing a diverse workforce and reducing unemployment rates, while their revenue streams, including catering and events, contribute to GDP growth. Restaurants play a vital role in fostering economic growth and stability by driving demand in sectors like agriculture, logistics, and hospitality equipment manufacturing (Piramanayagam and Seal, 2020).

Restaurants are pivotal attractions in tourism, driving culinary and gourmet tourism by offering unique local experiences. This sector supports the broader hospitality industry, benefiting restaurants and ancillary services alike. Innovative menus and services enhance the restaurant industry's resilience and encourage entrepreneurial ventures, promoting economic diversification (Li, 2023). Restaurants are integral to contemporary economies due to their multifaceted contributions, solidifying their profound significance (Leach et al., 2020).

2.4 Restaurant Design Strategies

Restaurant design requires careful consideration of various strategies to ensure a welcoming, functional, and visually appealing space. From the concept and layout to the ambiance and accessibility, every aspect contributes to creating a memorable dining experience (Altomonte, Allen, Bluysen, Brager, Hescong, Loder, Schiavon, Veitch, Wang, and Wargocki, 2020). Lighting, colour, sound and acoustics, heating, cooling, and ventilation, material selection, outdoor area design, and restaurant layout should all be properly considered and accounted for in every type of restaurant (Lam, 2020).

2.5 Lighting Design

Lighting, whether natural or artificial, serves both functional and aesthetic purposes. It enhances visibility and contributes significantly to the overall atmosphere of a space (Sholanke, Fadesere, and Elendu, 2021). In restaurant design, lighting plays a crucial role in creating a comfortable and inviting ambiance, influencing customers' emotions and overall dining experiences (Shin Yu-Bin, Seung-Hyun Woo, Dong-Hyeon Kim, Jinseong Kim, Jae-Jin Kim, and Jin Young Park, 2015). The interplay of light and shadow defines a space's character, with brightness evoking joy and its absence potentially inducing melancholy. Lighting design considers utility, human health, and aesthetics (Dönmez, 2016). Uniform lighting can diminish allure (Durocher, 2010), while excessive brightness can affect food presentation negatively.

2.6 Colour Design

Colour profoundly influences human perception on physical, emotional, and psychological levels (Obaleye, Ezema, and Adeboye, 2021). Warm and cool shades can impact perceived temperature, while neutrals like cream and grey have less effect (Omale and Ekpeta, 2020). Color can transform spaces, creating the illusion of spaciousness or adding brightness (Cho and Suh, 2020), essential for shaping ambiance and surroundings. Before deciding on colours, designers should contemplate the specific ambiance they aim to evoke within the space. To catch attention and draw customers from afar, fast-service restaurants and fast-food chains opt for vibrant and vibrant colour palettes, whereas full-service eateries opt for more subdued and muted shades (Dönmez, 2016).

2.7 Acoustic Design

Sound management is vital in residential neighbourhoods and dining establishments (Malekshahi, 2013). Building acoustics offers strategies to mitigate various noise sources, including airborne transmission, impact-generated noise, machine-generated noise, and internal device noise (Oluwatayo et al., 2021). Materials for noise control fall into three categories: sound-absorbing, sound-blocking, and vibration-dampening. Sound-absorbing materials like natural fibers dissipate sound energy, sound-blocking materials act as barriers and vibration-dampening materials reduce radiated sound (Adewale and Mozimo, 2022).

Fast-food and fast-casual eateries generally experience higher noise levels than upscale dining establishments (Malekshahi, 2013). Restaurant noise sources include kitchen operations, chair movements, customer presence, food delivery, dining sounds, conversations, and background music (Malekshahi, 2013). Noise requirements for restaurants typically range between 35 and 40 Decibels (dB) (Negreira, 2021). Effective noise reduction strategies include dividing dining spaces with partitions, utilizing table and chair coverings, employing acoustic wall panels, and integrating sound-absorbing materials (Varnedoe, 2020).

2.8 Heating, Cooling, and Ventilation

Effective temperature and air quality management in restaurants often rely on air duct systems (Malekshahi, 2013). Regardless of kitchen size, proper ventilation is vital to handle heat and odors. HVAC systems not only control humidity but also prevent water vapor transfer and condensation (Aderonmu et al., 2019). Implementing HVAC

systems can create a user-friendly environment (Turhan et al., 2021), offering controlled, cooled, and well-ventilated spaces, with potential for automation and centralization using computer technologies (Mellick Lopes et al., 2020).

2.9 Material Selection

In restaurants, material selection plays a vital role in shaping aesthetics, atmosphere, and functionality (Atabey, 2013). Variations exist between materials used in kitchen and support areas (back of the house) versus dining and public spaces (front of the house), impacting design coherence (Atabey, 2013).

Designers consider the structure's intended purpose, usage conditions, and occupants when choosing materials (Altay and Salcı, 2023). Flooring in restaurants influences refinement, comfort, seating, sound management, and directional cues (Chew, 2021). Wall treatments, encompassing a range of materials like wood, stone, plaster, brick, glass, concrete, metal, and wallpaper, significantly contribute to the ambiance and emotional atmosphere (Ivashko et al., 2021).

2.10 Exterior Space Design

A restaurant's exterior design swiftly shapes customer perceptions, offering an initial glimpse into its character and quality (Uzir et al., 2021). A well-crafted exterior can enhance the restaurant's perceived excellence, attracting new customers (Chakraborty et al., 2017). Incorporating well-designed windows in the facade creates a visual link between the interior and exterior, allowing patrons to see inside. Skylights and windows serve as focal points, channeling external light and effectively defining the space (Ünsal, 2018).

2.11 Restaurant Layout Design

Efficient service duration in restaurants relies on the integration of design and technology (Chin et al., 2019). Restaurant layouts aim to facilitate the smooth movement of patrons, staff, and equipment, eliminating interruptions and intersections. A comfortable indoor environment enhances occupants' effectiveness (Sholanke et al., 2022). In restaurant layout planning, an organized flow starts with ingredient reception, moves through storage, kitchen, preparation, and serving areas, and returns to the rear of the establishment (Vinck et al., 2019). Various zones, including reception, kitchen, dining, bar, service stations, cashier's area, employee workspace, customer restrooms, storage, and staff facilities, require careful early planning (Baraban and Durocher, 2010). Each sector holds significant importance, necessitating meticulous assessment and design attention.

3. Methodology

This study assessed user satisfaction with design strategies in four selected restaurants in Lekki, Lagos, Nigeria: See Lagos, Medusa Lagos, Blackbell, and Amala Sky Lagos. Employing a mixed-method research approach, it combined qualitative observation and content analysis with quantitative data collection using structured questionnaires. Randomly selected customers during working hours participated, with a total of 677 questionnaires distributed across the four restaurants: 203 shared at See Lagos, 182 at Medusa Lagos, 155 at Blackbell, and 137 at Amala Sky Lagos.

The study achieved its objectives by conducting a comprehensive literature review to identify restaurant design strategies that enhance user satisfaction. This informed the creation of an observation guide and a structured questionnaire. Data collected through these methods were analyzed using statistical software and presented descriptively with tables and figures for clarity.

4. Findings And Discussion

The results obtained through the analysis of the data retrieved are outlined as follows:

4.1 Appraisal of the Strategic Design Characteristics of the Selected Restaurants

4.1.1 See Lagos

See Lagos, situated at 36B Wole Ariyo in Lekki Phase 1, Lagos, is a deliberately designed contemporary fine dining restaurant. Its vibrant green exterior ensures visibility. To the left of the entrance, a lush green area serves

as both a touch of nature and outdoor seating. Inside, a blend of brown and green hues creates a lively yet minimalist ambiance. The space radiates vitality. Upstairs, a business lounge, cocktail bar, and a private dining section with a library theme offer a cozy and intimate atmosphere with subdued lighting, comfortable blankets, and a collection of borrowable books.

4.1.2 Medusa Lagos

Medusa Lagos, located at No. 3 Ogbunike Street, Off Admiralty Way in Lekki Phase 1, Lagos, is a multifaceted establishment housing a bar, fine dining restaurant, lounge, and club. Its outdoor bar and lounge area, enriched with greenery and transparent roofing, provide an inviting ambiance. A graceful water fountain adorned with the inscription "MEDUSA" greets visitors at the entrance, its simple design exuding captivating beauty. Inside, the interior is thoughtfully segmented, catering to diverse guest preferences, offering intimate settings for couples and communal spaces for groups of friends or colleagues.

4.1.3 Blackbell

Blackbell, located at Block 2, Plot 69A on Admiralty Way in Lekki Phase 1, Lagos, is a fast-casual restaurant known for its captivating atmosphere. As patrons enter, strategically placed mirrors enhance the dim yet improved decor, brightening the interior. The restaurant features seating areas and an order counter upon arrival, with the kitchen nearby and restroom facilities opposite. Ample illumination and a glass panel-adorned first floor allow for natural light, enhancing the overall ambiance.

4.1.4 Amala Sky Lagos

Amala Sky Lagos, located adjacent to Fidelity Bank on Admiralty Way in Lekki Phase 1, Lagos, is a fast-casual eatery specializing in affordable local cuisine. The restaurant's exterior is distinguished by prominent black protruding panels and the "Amala Sky" inscription. At the entrance, petite vases with charming blossoms add an elegant touch. Inside, the counter is a focal point where attentive waiters manage orders and food service. The restaurant offers seating on both the ground and first floors, ensuring a comfortable dining experience for patrons.

5. Questionnaire Response Analysis

As explained in the methodology section, 677 survey questionnaires were distributed across the four purposively selected restaurants in the study area. All the 677 questionnaires were retrieved, out of which one, from See Lagos was found not to be sufficiently completed and discarded. A total of 676 questionnaires were adequately completed and used for the study to record a response rate of 99.85% which is considered adequate for generalising the result as a true representation of the selected restaurants. The high response rate recorded was mainly due to the fact that only customers who agreed to take part in the study were given the questionnaire to fill.

5.1 Profile of the Respondents

Table 1 shows the users' profile which includes their gender, age, educational level, and frequency of visits to the restaurants.

Table 1: Profile of the Respondents

SN	Variables	Categories	Frequency (N = 676)	Percentage (N = 100)
1.	Gender	Male	326	48.51
		Female	350	51.70
2.	Age Range	16 – 25	287	42.39
		26 – 35	200	29.54
		36 – 45	96	14.18
		46 – 55	56	8.30
		56 & Above	37	5.47

3.	Educational Qualification	S.S.C.E.	40	5.91
		N.C.E.	59	8.71
		O.N.D.	98	14.48
		B.Sc.	313	46.30
		Postgraduate	167	24.67
4.	Number of Restaurants Visited	5 and Below	95	14.05
		6	116	17.16
		7	110	16.27
		8	129	19.08
		9 and Above	226	33.43
5.	Frequency of Visits to the Restaurants	Always	182	26.92
		Sometimes	213	31.50
		Uncertain	107	15.82
		Occasionally	106	18.68
		Rarely	68	10.06

5.2 Gender Distribution

Table 1 shows a slightly higher representation of female participants (51.70%) compared to male participants (48.15%).

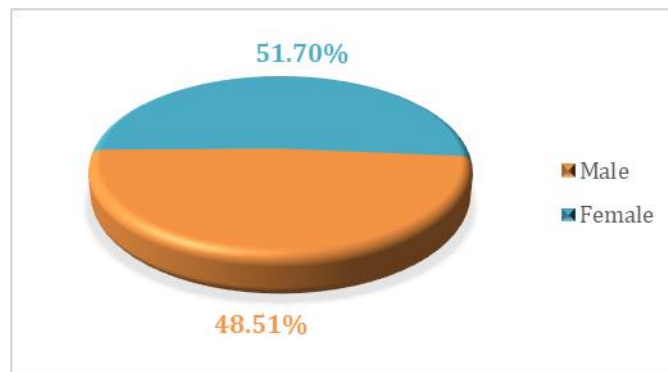


Figure 1. Gender Distribution of the Respondents

5.3 Age Range

The result on age distribution indicates that majority of the customers fall within the age group of 16 - 35 years. Almost half (42.39%) of the participants are 25 years and below, while over a quarter (29.54%) of them are between 26 - 35 years. Customers above 36 years are few. Specifically, those between the ages of 36 - 45 years are 14.18%, 46 - 55 years are 8.30%, while 56 years and above are just 5.47%, as shown graphically in Figure 2.

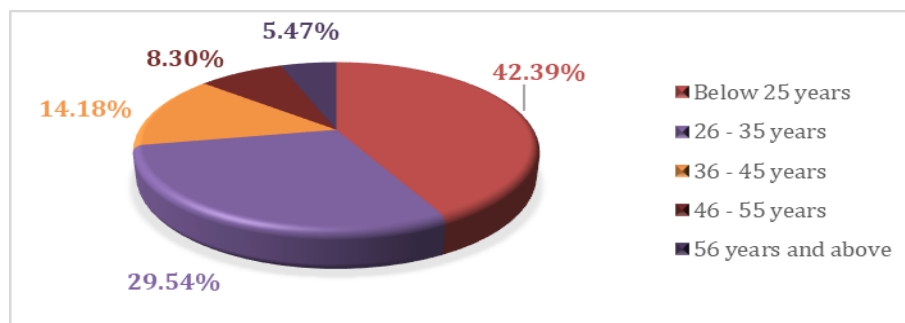


Figure 2. Age Range of the Respondents

5.4 Educational Qualification

The data in Table 1 indicate a diverse distribution of educational backgrounds among the respondents who are generally educated, to indicate that they are all educated enough to be able to read, understand and provide appropriate answers to the survey questions. Close to three quarter of the participants have at least a first degree, with 46.30% having Bachelor of Science (B.Sc.) degree, while those with postgraduate degrees are 24.67%. Polytechnic graduates with Ordinary National Diploma (O.N.D) are 14.48%. Users' with National Certificate of Education (N.C.E.) are 8.71%, while just 5.91% of the participants are holders of the Senior Secondary School Certificates (S.S.C.E.) as graphical represented in Figure 3.

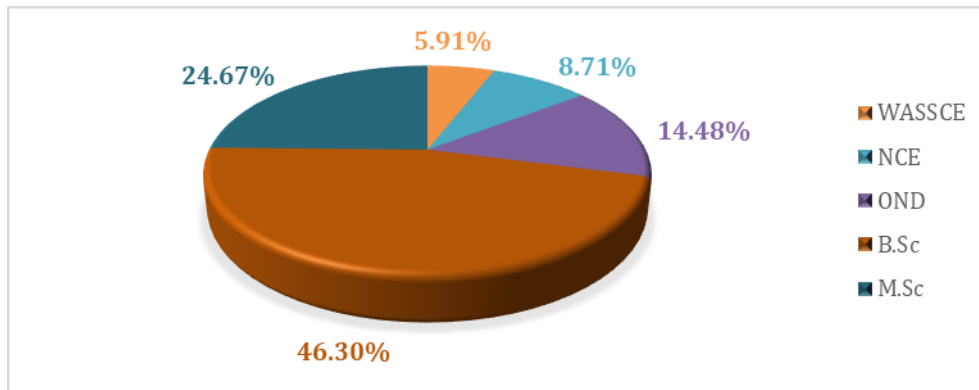


Figure 3. Educational Qualification of the Respondents

5.5 Number of Restaurants Visited

The data in Table 1 also reveal a diverse distribution of restaurant visitation behaviour among the respondents, with majority of the participants indicating that they have visited the restaurants at least 6 times. Those who have visited 9 times and above are the majority (33.43%), followed by 8 times (19.08%), 6 times (17.16%) and 7 times (16.27%). The least category are customers who have visited 5 times and below (14.05%) as shown graphically in Figure 4.

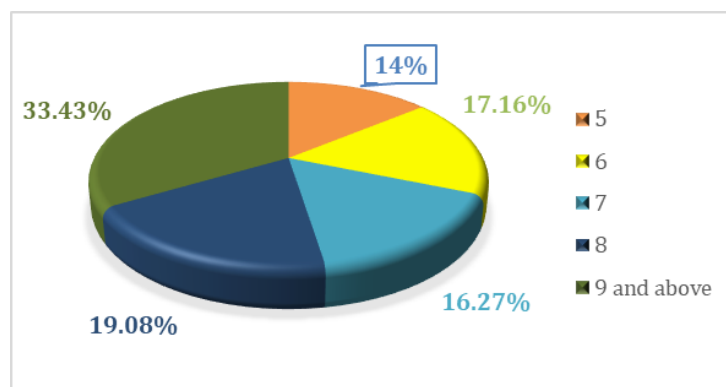


Figure 4. Number of Restaurants Visited

5.6 Frequency of Visits to the Restaurants

A 5 Likert scale with the variables (always, sometimes, uncertain, occasionally and rarely) was used to evaluate the frequency of visits of the participants to the restaurants. The result as shown in Table 1 also indicates majority of the customers are regular visitors to the restaurants, with 31.50% of them signifying that they visit sometimes, while 26.92% visit always. Those who visit occasionally are 18.68%, whereas 15.82% of the patrons are uncertain of their frequency of visit. Those who rarely visit the restaurants are few (10.06%) as shown graphically in Figure 5.

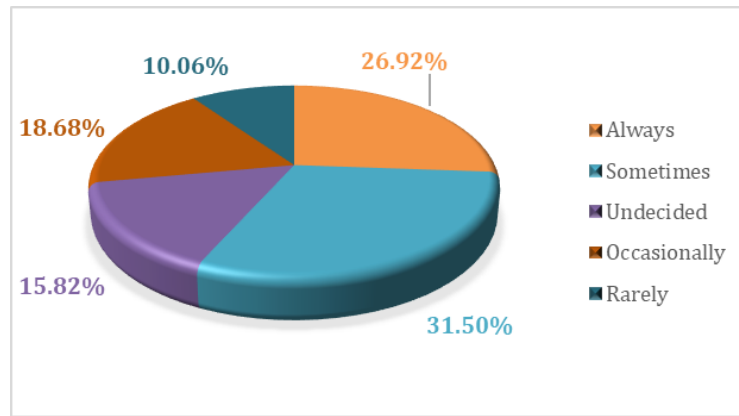


Figure 5. Frequency of Visits to the Restaurants

Users’ Satisfaction Levels with Design Strategies of the Selected Restaurants

The design strategies considered for the study include lighting; interior colour; exterior colour; heating, cooling, and ventilation; acoustics design; floor, wall, and ceiling material selection; exterior space design; and layout design. The findings are presented as follows:

Users’ Satisfaction Level with Interior Lighting

The result of the users’ satisfaction level with interior lighting is shown in Table 2.

Table II: Users’ Satisfaction Level with Interior Lighting

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Lagos	120	20	62	1
2.	Medusa Lagos	147	10	25	0
3.	Blackbell	108	12	35	0
4.	Amala Sky Lagos	116	9	12	0

Table 2 reveals that in all four restaurants, the majority of customers express satisfaction with the interior lighting. Amala Sky Lagos leads with 116(84.67%) satisfaction, 9 (6.57%) were undecided, and just 12 (8.76%) were unsatisfied followed closely by Medusa Lagos at 147(80.77%) patrons expressing satisfaction,10 (5.49%) undecided and, just 25 (13.74%) were unsatisfied. Blackbell records 108 (69.68%) satisfaction, 12 (7.74%) were undecided, and 35 (22.58%) unsatisfied, while See Lagos, although lower, still has 120 (59.11%) satisfaction. Whereas in See Lagos, 120 (59.11%) patrons were satisfied, 20 (9.85%) were undecided, 62 (30.54%) were unsatisfied, and 1 (0.49%) response was missing.

Users’ Satisfaction Level with Interior Colour

The findings on users’ satisfaction level with interior colour are presented in Table 3.

Table III: Users’ Satisfaction Level with Interior Colour

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Lagos	131	45	26	1
2.	Medusa Lagos	112	26	44	0
3.	Blackbell	76	44	35	0
4.	Amala Sky Lagos	84	25	28	0

The data in Table 3 also indicate that majority of the patrons in all the restaurants signified satisfaction with the interior colour of the restaurants. Again, Amala Sky Lagos recorded the highest percentage of satisfied participants with 84 (61.31%) satisfied customers, 25 (18.25%) patrons were undecided, and 28 (20.44%) unsatisfied responses were recorded. This is followed by See Lagos with 131 (64.53%) patrons indicating satisfaction, 45

(22.17%) were undecided, 26 (12.81%) unsatisfied, and 1 (0.49%) response was missing. In Medusa Lagos, 112 (61.54%) patrons expressed satisfaction, 26 (14.29%) were undecided, and 44 (24.18%) were unsatisfied. Blackbell recorded the least percentage of satisfied patrons with 76 (49.03%) customers indicating satisfied, 44 (28.39%) were undecided, and 35 (22.58%) unsatisfied responses were recorded.

Users' Satisfaction Level with Exterior Colour

The result on users' satisfaction level with exterior colour is displayed in Table 3.

Table IV: Users' Satisfaction Level with Exterior Colour

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Lagos	134	44	24	1
2.	Medusa Lagos	93	13	76	0
3.	Blackbell	73	49	33	0
4.	Amala Sky Lagos	78	35	24	0

In all the restaurants, most patrons were satisfied with the exterior colour. See Lagos had the highest satisfaction rate with 134 (66.01%) patrons satisfied, followed by Amala Sky Lagos with 78 (56.93%) satisfied responses. Medusa Lagos had 93 (51.01%) patrons satisfied, while Blackbell had 73 (47.17%) satisfied participants.

Users' Satisfaction Level with Acoustic Design

The findings on users' satisfaction levels with acoustic design is shown in Table 5.

Table V: Users' Satisfaction Level with Acoustic Design

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Lagos	125	22	55	1
2.	Medusa Lagos	113	26	43	0
3.	Blackbell	66	53	36	0
4.	Amala Sky Lagos	84	30	23	0

In Medusa Lagos, 113 (62.09%) patrons were satisfied with the acoustic design, 26 (14.29%) were undecided, and 43 (23.63%) were not satisfied. In See Lagos, 125 (61.58%) were satisfied, 22 (10.84%) were undecided, 55 (27.09%) were not satisfied, and 1 (0.49%) response was missing.

In Amala Sky Lagos, 84 (61.31%) participants were satisfied, 30 (21.90%) were undecided, and 23 (16.79%) were unsatisfied. In Blackbell, 66 (42.58%) were satisfied, 53 (34.19%) were undecided, and 36 (23.23%) were unsatisfied.

Users' Satisfaction Level with Heating, Cooling, and Ventilation

The result on users' satisfaction level with heating, cooling, and ventilation is presented in Table 6.

Table VI: Users' Satisfaction Level with Heating, Cooling, and Ventilation

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Lagos	136	29	38	1
2.	Medusa Lagos	124	32	26	0
3.	Blackbell	101	17	37	0
4.	Amala Sky Lagos	90	32	15	0

Table 6 reveals that the majority of participants in each restaurant expressed satisfaction with the heating, cooling, and ventilation systems. Medusa Lagos had the highest satisfaction rating with 124 (68.13%) patrons satisfied, followed by See Lagos with 136 (67.00%) patrons satisfied. In Black Bell, 101 (65.16%) respondents were

satisfied, and in Amala Sky Lagos, 90 (65.69%) were satisfied. A portion of respondents in each restaurant remained undecided or unsatisfied.

Users' Satisfaction Level with Materials Selected for Walls, Floors and Ceilings

The result on users' satisfaction level with materials selected for the walls, floors and ceilings is displayed in Table 5.

Table VII: Users' Satisfaction Level with Materials Selected for Walls, Floors and Ceilings

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Lagos	140	26	36	1
2.	Medusa Lagos	110	33	39	0
3.	Blackbell	75	44	36	0
4.	Amala Sky Lagos	83	28	26	0

Table 7 indicate that in all the restaurants most of the respondents are satisfied with the materials selected for the walls, floors and ceilings. See Lagos tops the list with 140 (68.97%) patrons satisfied, 26 (12.81%) undecided, 36 (17.73%) unsatisfied, and 1 (0.49%) response was missing. This is followed by Amala Sky Lagos with 83 (60.58%) participants satisfied, 28 (20.44%) undecided, and 26 (18.98%) not satisfied. In Medusa Lagos, the result is similar, where 110 (60.44%) patrons expressed satisfaction, 33 (18.13%) were uncertain of their opinion, and 39 (21.43%) were unsatisfied. Blackbell also had most of the patrons signifying satisfaction, but with a significant number of them undecided and not satisfied. The data shows that 75 (48.39%) respondents were satisfied, 44 (28.39%) undecided, and 36 (23.23%) not satisfied.

Users' Satisfaction Level with Exterior Space Design

The record of the findings on users' satisfaction level with exterior space design is revealed in Table 8.

Table VIII: Users' Satisfaction Level with Exterior Space Design

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Lagos	117	50	35	1
2.	Medusa Lagos	127	26	29	0
3.	Blackbell	109	31	15	0
4.	Amala Sky Lagos	82	24	31	0

Table 8 reveals that the majority of patrons in all the restaurants were satisfied with the design of the exterior space. Blackbell had the highest satisfaction rate with 109 (70.32%) responses, but 31 (20.00%) were undecided, and 15 (9.68%) were unsatisfied. Medusa Lagos closely followed with 127 (69.78%) satisfied patrons, 26 (14.29%) undecided, and 29 (15.93%) unsatisfied. Similarly, Amala Sky Lagos had 82 (59.85%) satisfied responses, 24 (17.52%) undecided, and 31 (22.63%) unsatisfied. See Lagos had 117 (57.64%) satisfied, 50 (24.63%) undecided, 35 (17.24%) unsatisfied, and 1 (0.49%) missing response.

Users' Satisfaction Level with Interior Layout Design

The result of the users' satisfaction level with interior layout design is shown in Table 9.

Table IX: Users' Satisfaction Level with Interior Layout Design

SN	Restaurants	Satisfied	Undecided	Unsatisfied	Missing
1.	See Restaurant	149	42	11	1
2.	Medusa Lagos	129	37	16	0
3.	Black Bell	123	19	13	0
4.	Amala Sky	102	15	20	0

Table 9 highlights that the majority of respondents across all restaurants were satisfied with the interior layout design. Blackbell had the highest satisfaction rate with 123 (79.35%) patrons satisfied, 19 (12.26%) undecided, and 13 (8.39%) unsatisfied. Amala Sky Lagos followed with 102 (74.45%) satisfied, 15 (10.95%) undecided, and 20 (14.60%) unsatisfied. See Lagos had 149 (73.40%) satisfied participants, 42 (20.69%) undecided, 11 (5.42%) unsatisfied, and 1 (0.49%) missing responses. In Medusa Lagos, 129 (70.88%) expressed satisfaction, 37 (20.33%) were undecided, and 16 (8.79%) were unsatisfied.

5.7 Design Strategies that Affect Users' Satisfaction Level the Most

The participants were asked to rate which of the design strategies investigated affected their satisfaction level the most. The result obtained is shown in Table 10.

Table X: Design Strategies that Affect Users' Satisfaction Level the Most

SN	Which design strategies affect your comfort level the most?	Frequency (N=676)	Percentage (%)	Rank
1.	Lighting	207	30.62	1st
2.	Material Selection of Walls, Floors, and Ceilings	102	15.09	2nd
3.	Exterior Colour Design	96	14.20	3rd
4.	Interior Colour Design	85	12.57	4th
5.	Interior Layout Design	54	7.99	5th
6.	Acoustic Design	50	7.40	6th
7.	Exterior Space Design	46	6.80	7th
8.	Heating, Cooling, and Ventilation	37	5.47	8th

Table 10 presents the respondents' preferences for design variables affecting their comfort levels. Lighting was the top choice, with 207 participants (30.62%) ranking it first. Material selection for walls, floors, and ceilings ranked second, chosen by 102 participants (15.09%). The exterior colour was ranked third by 96 participants (14.20%), while interior colour and layout ranked fourth and fifth, with 85 (12.57%) and 54 (7.99%) participants respectively. Acoustic design was the sixth preference for 50 (7.40%) patrons, while exterior space design and heating, cooling, and ventilation ranked seventh and eighth, chosen by 46 (6.81%) and 37 (5.47%) participants.

6. Discussion

The study, influenced by research from Varnedoe (2020), Unsal (2018), and El-Sharkawy and Javed (2018), emphasized the significance of design strategies in shaping user satisfaction within the restaurant industry. Focusing on Lagos, Nigeria, the research examined user preferences and perceptions of design elements in four selected restaurants. Evaluating interior colour perceptions, the study found varying results. See Lagos, Medusa Lagos, Amala Sky Lagos, and Blackbell all received satisfactory ratings for their interior color schemes, enhancing the ambiance and tranquility of these establishments.

Assessing exterior colors, See Lagos used an ash hue for a serene entrance. Medusa Restaurant stood out with vibrant green. Amala Sky Lagos employed black protruding panels for distinction. Blackbell featured black walls with brown plants for a unique look.

In terms of heating, cooling, and ventilation, a mixed approach combining natural and artificial ventilation, including air conditioning systems, was commonly adopted among the study area's restaurants. The evaluation of material selection for walls, floors, and ceilings revealed a range of choices. See Lagos demonstrated a thoughtful selection of non-slippery floor tiles, colour-coordinated walls, and concrete ceilings with exposed piping. Medusa Lagos, Amala Sky Lagos, and Blackbell all featured non-slippery floor tiles and white-painted walls, complemented by a PVC ceiling finish. In terms of exterior space design, each restaurant exhibited distinct features.

The analysis of the restaurant's layout design disclosed variations among the establishments. See Restaurant and Medusa Restaurant both displayed well-organized layouts, with appropriate zoning between the toilet, kitchen, and dining areas. Outdoor and indoor seating, adorned with plants and a glazed roof, enhanced the dining experience. Amala Sky Lagos also achieved an effective layout, with proper separation between the toilet, kitchen, and dining areas. In contrast, Blackbell's layout exhibited shortcomings, with the toilet positioned near the kitchen and dining areas.

Lighting strategies varied among restaurants. See Lagos had limited fenestration, while Medusa Lagos had expansive windows. Blackbell and Amala Sky Lagos also utilized windows. The significance of lighting for user comfort aligns with previous studies (Sholanke et al., 2021; Shin et al., 2015; Donmez, 2016; Durocher, 2010).

7. Conclusion

This study assessed user satisfaction with design strategies in four selected restaurants in Lagos, Nigeria: See Lagos, Medusa Lagos, Blackbell, and Amala Sky Lagos. The most influential design strategy on user satisfaction was lighting, followed by wall, floors, and ceiling material selection. Exterior color, interior color, interior layout, and acoustic design ranked lower. Exterior space design and heating, cooling, and ventilation had the least impact. These findings have implications for the restaurant industry and design practices, potentially raising the standards for dining experiences in Lagos, Nigeria.

Based on the study's findings, it is recommended that restaurant owners and designers prioritize effective lighting, interior and exterior color schemes, quality layout, and material selection for walls, floors, and ceilings. Attention should also be given to acoustics, heating, cooling, ventilation, exterior spaces, and restaurant layout to enhance the overall dining experience.

The authors recognize that the study has its limitations. The findings are context-specific to the selected restaurants in the study area, and may not be generally applicable to every locality. Nevertheless, this does not set aside the contributions to knowledge of the study that include: disclosure of empirical data on the strategic design characteristics of the selected restaurants; discovery of the relevant profile of the patrons of the restaurants; revelation of users' satisfaction level with design strategies employed in the restaurants; and discovery of the design strategies that affects users' satisfaction level the most in the selected restaurants.

8. Declaration of Conflict of Interest

The authors declare no conflict of interest.

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