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User Experience of Architectural Promenade in Art and Cultural Centres in Calabar, Crossriver State, Nigeria

O. J. Ediae¹, F. J. Abeng² and J. C. Egbudom³

Department of Architecture, KM 10 Idiroko Road, Covenant University, Ota, Ogun State, Nigeria.

Authors emails: ¹osahon.ediae@covenantuniversity.edu.ng

²favour.abengpgs@stu.cu.edu.ng

³jude-thaddeus.egbudonpgs@stu.cu.edu.ng

Abstract. The architectural success of any structure depends on how well people experience spaces. In order to improve the overall user experience in spaces, the architectural promenade concept has become a part of modern architectural design. Despite this, little is known about it or how it affects the user experience, particularly in Art and Cultural Centres. This research aims to assess the user experience of architectural promenade in selected Art and Cultural Centres in Calabar, Cross-river state, Nigeria. A quantitative methodology was applied to gather data from the selected arts and Cultural Centres in Calabar, Crossriver. The Statistical Package for the Social Sciences (SPSS) version 2021 software was employed to analyse the acquired data. The findings indicated that many users did not necessarily enjoy the architectural promenade in Cultural Centres, affecting their overall experience of spaces. The study recommended architectural promenade as an area of user experience that researchers could focus on in research. It also suggests Architects architectural promenade as a conscious consideration in the design of art and Cultural Centres.

Keywords: Architectural Promenade, User Experience, Art, Cultural Centre

1. Introduction

The world is diverse as the way people live differs. Many people want to experience different cultures, which brought about the concept of tourism. Architecture plays a huge role in the concept of Culture and tourism[7] as Art and Cultural Centres play a significant role in showing the people's way of life around that community, impacting tourist attractions in cities and regions. Art and Cultural Centres are inseparable from the communities[15]. A great Art and Cultural Centre that reflects the people's way of life tends to attract both citizens and outsiders of the region. The primary source of attraction of any Art and Cultural Centre is the ability to tell stories. This means that an Art and Cultural Centre has to adopt architectural storytelling as a design principle so that the space users will experience a story at each point while walking through space.

Since adopting the formalist attitude since the industrial revolution, there has been a disconnect between architecture and users. Architecture has focused more on functionality and aesthetics, abandoning the emotional connection and the narrative experience of users[11]. This disconnect has made it more difficult for users to fully experience buildings, especially those representing something symbolic like Arts and Cultural Centres. The interest in these buildings is currently declining as they are no longer patronised as much as they should be.

Art and cultural institutions use visual and auditory storytelling techniques to transmit messages through performances, artefacts, and books. However, in addition to audiovisual narration, this study reveals that architecture itself can be viewed as a medium of spatial storytelling, as exhibited spatially and cognitively for users via architectural promenade.

In order to improve the overall user experience in spaces, the architectural promenade concept has become a part of modern architectural design. This concept was made famous by Le Corbusier to connect people better to their environment as they walk through it. Using various design features and architectural



components, spaces can evoke emotions in users and place greater importance on the connection between users and the spaces to tell a meaningful story. This enables people to interact with a space's message and transmit their own experiences through a variety of emotional responses that influence the users' perception of the environment. This means that a space can be understood through its constituent elements and their relationships, allowing users to encounter new concepts or messages in the area[18], and the principle of architectural promenade promotes the architectural narrative of spaces.

As Architectural promenade is highly dependent on user experience, this study aims to assess the user experience of architectural promenades in selected Art and Cultural Centres in Calabar, Cross-river state, Nigeria. Numerous researches has been conducted on user satisfaction and visual experience[10] and analysed to determine how buildings enhance users' visual experiences and elicit specific emotions in individuals; however, there is an existing gap in the study and evaluation of user experience in relation to the architectural promenade. Hence, this study addresses two key objectives. First, it identifies the units of measurement for user experience in buildings and evaluates the users' experience of the architectural promenade in art and Cultural Centres.

2. Literature Review

As architectural spaces have grown to include more than just spatial and architectural requirements, the consideration of user experience, in addition to other architectural requirements, has become an increasingly important factor in space planning and development. Le Corbusier defines the architectural promenade as the visual images exposed to a user as he or she traverses through a built environment[13]. It encompasses both the narrative experience of a place and a more general visual experience that entails inducing specific emotions in users and establishing relationships between them and their environment. Architectural promenade, according to Le Corbusier, is formed from the sequential progression that induces a narrative to arouse the visions and experience of users as they progress[8]. Every building has an architectural promenade, whether designed intentionally or not. This is because people always experience spaces, and the success of a design is contingent upon the user experience. Arts and Cultural Centres promote Art and Culture, educate the public[6], and preserve history, among other things. Nonetheless, one thing is sure: they produce narratives and interactions.

As with things, every place is experienced via usage and movement[1]. Without movement, one cannot fully experience architecture as the whole user experience cannot be gotten from only one point of reference[8]. Architecture exists due to shape and space, which can be perceived from movement[9]. Movement makes it possible for the experience and perception of time and space to be amplified[8]. Ahmadi (2019) asserts that the primary criterion for movement or narrative experience in architecture is human interaction[9]. He believed that individuals must interact with the built environment and its shape before any architectural promenade, as movement is a vehicle that helps users comprehend shape and space. In architecture, the movement could be grouped into two major parts and interaction with spaces leads to one of these types. The expression of movement entails the contained movement where the elements and architecture are static but what defines movement is the perception of the eye, mind, imagined body or forces. The perception of movement also entails the represented movement where the architecture creates the appearance of movement or implies movement[5]. Amahdi (2020) classified movement into three significant parts, as represented in Figure 1[1].

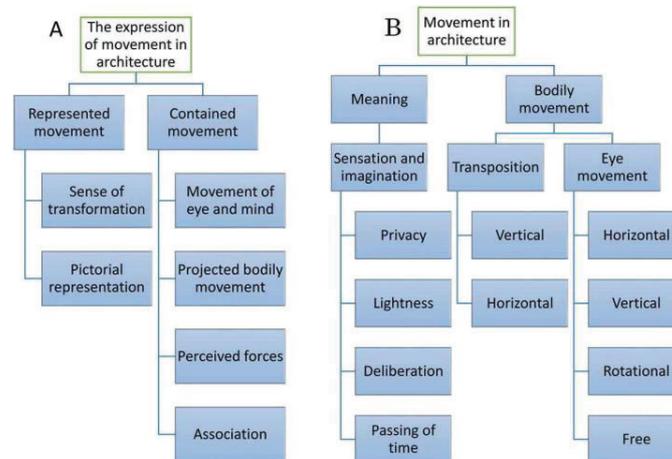


Figure 1. Movement types in the built space of outer space (Ahmadi, 2020)

Since Arts and Cultural Centres serve as historical, narrative, and interactive hubs, it means movement (circulation) is vital. For the spaces to be relevant, the stories and emotions must be conveyed, and interaction must be promoted. This emphasises the need for the conscious consideration of architectural promenade in Art and Cultural Centres. An Art and Cultural Centre with a bad promenade does not give a great narrative experience hence reduces the overall user experience as the building becomes an empty shell.

2.1. Elements of Architectural Promenade

Architectural promenade can be seen in five major elements. The threshold, sensitising vestibule, questioning, reorientation and culmination. The threshold involves the space which connects the outside surrounding to the desired site. This is also called the transition space as it is the intersection and combination of where the space abandoned and the space to be entered is accomplished. The threshold spaces are spatial configurations that reflect an individual's mental desire to adapt to a random scenario while progressing toward an alternate encounter[19]. It analyses the user's encounter and the first impression as they enter the site, view, and movement as they approach the building. The threshold in architectural promenade can be seen in the site entrance, facade transition spaces, site, vehicular routes, and pedestrian routes.

The sensitising vestibule emphasises that the vestibule and the building should experience a welcoming appeal for an excellent architectural narration. Le Corbusier defined the vestibule as the intestinal space that stands between the threshold and the start of a space[13]. It is where the observer is introduced to the interior of a space. The sensitising vestibule can be assessed in the building entrance, reception, lounges, doors, room volume and interior.

Questioning is where the story lies. It enables the observer to question and wonder, to marvel and to feel. It is expressed in Functional spaces, Interiors, and Narrative experiences. Reorientation has to do with the attraction to a new center of gravity[13]. It involves the discovery of a path. It is expressed in the stairs, ramps, and lobby. Culmination expresses The end of the journey, attainment of a view and the climax of a journey. The end of the architectural promenade should evoke something in the observer. The observer's experience should reach its climax[13]. It is expressed in views, endpoints of the building and the Circulation path.

2.2. Measuring User Experience

Human experience defined by interaction with architecture explicitly defines the nature of the users' architectural experience. It is vital in architecture because it is the end goal of any work of design. Every place or space can represent an atmosphere that invokes a certain emotion to users [11] via the things they see or interact with through their senses. As a concept with different aspects, experience within architecture

has been viewed as sensory owing to the notion that architecture is experienced physically[4]. Much emphasis had been placed on the visual aspect of architecture in time past. Thus, the visual style of designing buildings has been deemed insufficient in expressing the complexity of human experience[4].

In the delivery of any product, the physical environment serves a crucial role in framing customers' experiences. Physical environments provide environmental stimuli, serve as mechanical clues and thus are crucial in shaping the users' perception of the service offered[3]. Stakeholders have different requirements and hence require different forms of measurement that are efficient in measuring how effective the design is in meeting their goals. For clients, the Life Cycle Assessment serves as a valuable measure in the preconstruction stages. Professionals involved in the design and construction of the facility utilise Building performance tools, including Post Occupancy Evaluations. Much work has been conducted in improving the users' perspective on the efficiency of the building. The measurement of User experience prioritises the needs of the users and how effective the design is in meeting their requirements in both preconstruction and post-construction phases. However, a standardised means of measurement is still under development.

Several researchers considered human experience in diverse aspects within the domain of architecture and urban environments. To understand the concept of user experience, measurement is vital. The measurement of user experience enables designers to comprehend the perception of users about various aspects of the design, which promotes the development and improvement of the design or product. This ensures that the user's needs are met, and they have a better experience of the design or product[14]. Some agree that harnessing both quantitative and qualitative methodology is vital in measuring user experience [[12]. A mixture of methods has been used in measuring user experience. Those methods include laboratory tests, surveys, behavioural analysis, observation, interviews, and expert evaluation[2]. Biological equipment can be used with subjective measures to achieve a well-rounded outlook on the experience. In summary, the various data collection instruments reflect the various fields from which researchers have addressed this concept. Researchers grounded in neuroscience tend to have approached its measurement from more objective standpoints. Professionals in the built environment often address user or human experience with a combination of qualitative and quantitative tools. Time in conducting these measurements vary depending on the methodology being optimised. Some studies that combine technology and users' examination prefer testing in real-time. Other approaches vary based on the users being examined.

While user experience can be measured in various ways depending on the design, product, or users, what really matters is providing a tailored experience for the end-user. To do that, usability, accessibility, value, and usefulness must be considered[16]. This means that in measuring the user experience, these criteria must be evaluated[17]. In addition, human behaviour is taken into consideration while designing for usability. This is because usability measures how effectively, efficiently, and happy people use items or designs by quantifying their effectiveness, efficiency, and satisfaction. Thus, the metrics for measuring usability are task success rate, retention rate, error rate, conversion rate, user satisfaction rate and heuristic evaluation[20].

Task Success Rate is the rate of the users who completes a task successfully[20]. In architecture, it involves completing the journey through the building. This metric helps in the identification of problems with user experience. The Retention Rate is defined by how long the users patronise the design or product[20]. In building or architecture, this is demonstrated by the frequency of visits and activity use of users. It measures the long-term usefulness of the product [17]. The error rate identifies mistakes users make and bad experiences they have based on the design. These determine the gravity of usability challenges in usability as high error rates result in usability problems[20]. It could be losing one's way due to bad spatial planning or circulation routes. Conversion rate is a metric that indicates the proportion of users who complete the desired action.

User Satisfaction measures the fulfilment level of users. It can be measured via satisfaction survey, customer satisfaction score (their overall satisfaction of different elements on a scale from 1-5), net promoter score (how likely they are to recommend the place to someone) and customer effort score (On a scale from extremely easy to extremely difficult, how would you rate your experience). The Heuristic Evaluation are the key usability guidelines used in the evaluation[21]. They are gotten from already set standards but are

modified based on the project. The current standard existing heuristics principle is all based on user experience design in software and product. There is no established one for architecture. Figure 2 and 3 show the various heuristic principles, and Figure 3 shows a table of universal design principles taken as heuristics

Table 1. Summarised List of Usability Heuristic Principles (Krawiec & Dudycz, 2020)

1	2	3	4	5	6	7	8	9	10
Nielsen (1994)	Gerhardt-Powals (1996)	Weinschenk & Barker (2000)	Sivaji et al. (2011)	Tognazzini (2014)	Al-Nuiam & Al-Harigy (2015)	Shneiderman (2016)	Inostroza et al. (2016)	Dourado & Canedo (2018)	Krawiec & Dudycz (2020)
1. Visibility of System Status	-	2. Human Limitations 20. Responsiveness	7. Informative Feedback	9. Explorable Interface 19. Visible Interfaces	13. Feedback Guidelines	3. Offer Informative Feedback	1. Visibility of system status	1. Visibility of system status	5. Navigation, menu, and page grouping 6. Navigation between web pages
2. Match between System and the real world	3. Fuse Data 4. Present new information with meaningful aids to interpretation 8. Include in the displays only that information needed by the user at a given time 10. Practice judicious redundancy	2. Human Limitations 4. Accommodation 5. Linguistic Clarity 14. Cultural Propriety	8. Language & Content	14. Metaphors	6. Content Selection Guidelines	-	2. Match between system and real world	2. Correspondence between the Application and the real world	3. Content and the form of content presentation 4. Content and the substantive matter
3. User Control and Freedom	-	1. User Control 19. Forgiveness	3. Error Prevention & Correction 5. Flexibility & Control	3. Autonomy 6. Defaults 9. Explorable Interface 15. Protect Users' Work	10. Site Navigation Design 11. Guidelines for Managing Hyperlinks	4. Design dialogs to yield closure 6. Permit easy reversal of actions	3. User Control and freedom	3. User Control and Freedom	5. Navigation, menu, and page grouping 6. Navigation between web pages 7. Navigation-website search engine 8. Navigation - links
4. Consistency and Standards	6. Group data in consistently meaningful ways to decrease search time	6. Aesthetic Integrity 8. Predictability 11. Technical Clarity 16. Consistency 18. Precision	2. Consistency	5. Consistency 10. Fitts's Law 11. Human Interface Objects 13. Learnability	2. Page Layout Guidelines 5. Consistency Guidelines	1. Strive for Consistency 7. Keep users in Control	4. Consistency and Standards	4. Consistency and Standard	1. Website ergonomics 2. Consistency across the website 3. Content and the form of content presentation 4. Content and the

										substantiv e matter 5. Navigation ,menu and page grouping
5. Error Preventi on	2. Reduce uncertai nty	2. Human Limitations 10. Accuracy 11. Technical Clarity	3. Error Preventi on & Correctio n	3. Autonom y	1. Analysi s Guideli nes 9. Guideli nes using Tables	5. Prevent errors	5. Error Preventio n	5. Error Preventio n	3. Content and the form of content presentati on 14. Other errors and hindrance s	
6. Recogniti on rather than Recall	1. Automa te unwant ed workload 3. Fuse data 5. Use names that are concept ually related to function 10. Practice judiciou s redunda ncy	2. Human Limitations	12. Visual Clarity	2. Anticipati on	1. Analysi s Guideli nes 2. Page Layout Guideli nes	8. Reduce short- term memor y load	6. Minimize the user's memory load	6. Minimize the user's memory		
7. Flexibility and efficienc y of use	9. Provide multiple coding of data when appropri ate	3. Modal Integrity 4. Accomodati on 9. Intrepretatio n 12. Flexiibility 13. Suitable Tempo	5. Flexibility & Control	3. Autonom y 7. Discovera bility 8. Efficienc y of User 10. Fitts's Laaw 12. Latency Reductio n 13. Learnabi lity	12. User Input Guideli nes 14. Mobil e Conte xt Guideli nes	2. Seek univers al usabilit y 7. Keep users in Contro l	7. Customiza tion and shhortcor ts 8. Efficiency of use and performa nce	7. Customiza tion and shhortcor ts 8. Efficiency of use and performa nce	1. Website egronomi cs 7. Navigation - website search engine 8. Navigation - links	
8. Aesthetic and Minimali st Design	2. Reduce unccert ainty 7. Limit data- driven tasks 8. Include in displays only that informa tion needed by the user at a given time	2. Human Limitations 7. Simplicity 11. Technical Clarity	12. Visual Clarity	1. Aesthetic s 4. Colour 7. Discovera bility 10. Fitts's Law 16. Readabil ity 17. Simplici ty	2. Page Layout Guideli nes 3. Guideli nes for using Colou rs 4. Simplli city and Clarit y Guideli nes 7. Visual and Intera ction Desig n Guideli nes 8. Guideli nes for using		9. Aesthetic and Minimali st design	9. Aesthetic and Minimali st design	1. Website egronomi cs 7. Content and the substantiv e matter 8. Navigation ,menu and page grouping	

									image s and icons
9. Help users recognize, diagnose, and recover from errors	17. User Support 19. Forgiveness	3. Error Prevention & correction 8. Language & Content 11. User Guidance & Support	8. Efficiency of User	13. Feedback Guidelines	3. Offer Informative Feedback 5. Prevent Errors	10. Help users recognize, diagnose and recover from errors	10. Help users recognize, diagnose and recover from errors	14. Other errors and hindrances	
10. Help and documentation	17. User Support	11. User Guidance & Support	-	-	-	11. Help and Documentation	11. Help and Documentation	13. Help	
	13. Fulfillment	-	-	-	-	-	12. Pleasant and Respectful Interaction with the user	-	
		1. Compatibility 4. Explicitness 6. Functionality 9. Navigation	-	-	-	-	-	-	
Other authors suggestions	-	10. Privacy	18. State-Track it	-	-	-	13. Privacy	-	
		-	-	-	-	12. Physical Interaction and ergonomics	-	-	
		-	-	-	-	-	-	9. Accessibility- mobile devices 10. Accessibility- colour set 11. Accessibility- functions 12. Accessibility- Vehicle map	

Table 2: Universal Design Principles taken as Heuristics (Afacan & Erbug, 2009)

S/N	Design Principles	Definition	Design Consideration
1	Equitable Use	Rather of separating or stigmatizing any users, the design is useful and marketable to persons with different of abilities.	Users should be able to utilize and benefit from the design in the same way as it should be accessible to all and ensure their privacy, security, and well-being.
2	Flexibility in Use	The design is adaptable to a wide variety of user preferences and skills.	A well-thought-out design should allow for changes in the needs of all users over time and unforeseen changes in the environment.
3	Simple and Intuitive Use	The design is intuitive to use and understatand regardless of the user's knowledge or concentration level.	There should be enough contrast between the important information and the background to make the design effective.
4	Perceptible Information	The design successfully communicates vital information to the user independent of the state of the user's sensory capability	The design should provide adequate contrast between essential information and background conditions
5	Tollerance for Error	The design minimizes dangers and the negative repercussions of unexpected or inadvertent activities.	The design features should be aimed at reducing errors and hazards; simplicity in design is recommended, as is the usage of warnings/signages.

6	Low Physical Effort	The design allows for efficient and comfortable operation with minimal fatigue.	The design features should be such that sustained physical exertion is minimized.
7	Size and space for approach and use	User-friendly dimensions and space are offered independent of the user's body type, posture, or mobility.	Users who are seated or standing should be able to see the important elements in the design because of the features that are in place.

Using Table 1 and 2 by relating the usability heuristic principles across various fields to the universal design principles in architecture, the major heuristic principle for this study includes Aesthetic integrity, Flexibility, Responsiveness, Fulfillment, Predictability, Interpretation, Accessibility, Easy Wayfinding, User control and freedom, Cultural Proprietary and Human Limitations.

3. Research Methodology

The objectives of this study were to identify the units of measurement for user experience in buildings and evaluate the experience of the users of the architectural promenade in art and Cultural Centres. To accomplish these objectives, a qualitative and quantitative approach was used via literature review and survey. The literature review was used to achieve the first objective of identifying units of measurements for user experience in buildings. The second objective was achieved by using a survey done by administering a structured questionnaire. The research surveys were conducted between March 2021 and April 2021. The study population for the survey extends to all the users of the Cultural Centres in Calabar. The sample frame is made up of the users of the selected Cultural Centres in this research which were selected using purposive sampling. The two centres selected were the Calabar Cultural Centre and National Museum Calabar. To administer questionnaires, the study adopted a census method to select respondents to fill questionnaires as the population of users in the facilities is not known. This method involved dropping questionnaires within the facility for a period of one week to give the visiting users for that duration. A total of 100 questionnaires were administered and 83 were filled. 44 questionnaires were from the National museum Calabar, and 39 were from the Calabar Cultural Centre. The data collection instrument employed in this research was via questionnaire. The questionnaire was divided into 4 sections; Section A, Section B, Section C and Section D. Section A is based on the biodata of the respondents, Section B covers the satisfaction level of the architectural promenade based on spatial characteristics of the building, Section C focuses on the usability scale using heuristic principles of respondents and highlights the way people feel as they move through the spaces. Section D addresses the overall experience, retention rate and referral rate adopted in the facility as seen by the users of the space. A descriptive method of analysis was used in this research paper to achieve the objectives. The interpretation of results was done using tables and descriptions. The Oxford & Burry-Stock (1995) scales were also used in the descriptive analysis to compare mean deviations. It states that means ranging from 1.0 – 2.4 is low, 2.5 – 3.4 is medium, and 3.5 – 5.0 is high.

4. Results

To achieve the second objective of this paper and evaluate how various user groups experience the concept of architectural promenade in Cultural Centres, a statistical analysis was conducted on the data gotten. Data obtained from users of Calabar Cultural Centre and National Museum Calabar, in Crossriver state, Nigeria, was gathered from the distribution of the questionnaire. In total, 100 copies of the questionnaires were distributed using a simple random sampling technique. Out of the 100 questionnaires distributed, 83 were returned and considered valid for further analyses. This represents a return rate of 83%. Quantitative data were processed and analysed using descriptive statistical analysis methods using statistical package for the social sciences (SPSS) software. The testing method was univariate. The analysed data was assessed, arranged and presented using tables, pictures and numbers. Data was analysed based on the objectives of the research.

4.1. Calabar Cultural Centre User Experience Measurement of Architectural Promenade

4.1.1. Section A: Socio-Economic Characteristics Frequency Table for Calabar Cultural Centre. Section A of the questionnaire assessed and examined the socio-economic characteristics of the users. It, therefore, assessed gender, age group, marital status, income level, physical impairment and frequency of visit to Calabar Cultural Centre. Table 1 below presents the user's biodata and the interpretation following the table.

Table 3. Socioeconomic Characteristic Frequency Table for Calabar Cultural Centre

Biodata	Categories	Frequency	Percent
Gender	Male	17	43.6
	Female	22	56.4
Age group	Under 24 years (gen z)	17	43.6
	25-40 (millennial)	12	30.8
	41-56 (gen x)	6	15.4
	57-66(boomers ii)	2	5.1
	67-75(boomers i)	2	5.1
Income level	Less than 50,000 naira	8	20.5
	50,000-99,999 naira	5	12.8
	100,000-299,999 naira	12	30.8
	300,000-499,999 naira	8	20.5
	500,000-999,999 naira	4	10.3
	Above 1 million naira	2	5.1
Physical impairment/challenge	Yes	20	51.3
	No	19	48.7
Frequency of Visit in the last 10 years	Very Rarely (1-2 times)	16	41.0
	Rarely (3-4 times)	9	23.1
	Occasionally (5-7 times)	10	25.6
	Frequently (8-10times)	2	5.1
	Very Frequently (more than 10 times)	2	5.1
Total copies of questionnaire shared: 39			

The result in table 3 shows the demographic characteristics of the respondents. The result shows that 17 (43.6%) users were male while 22 (56.4%) were female. Based on age group, 17 (43.6%) respondent was below 24. 12 (30.8%) were between 25-40years, 6 (15.4%) were between 41– 56 years, only 2 (5.1%) were between 57– 66 years, only 2 (5.1%) were between 67-75, while no one was over 75 years of age.

The table also revealed on the income level of users that 8 (20.5%) earned less than 50,000 naira, 5 (12.8%) earned between 50,000 and 99,999 naira, 12 (30.8%) earned between a 100,000 naira and 299,999 naira, , 8 (20.5%) earned between a 300,000 naira and 499,999 naira and 4 (10.3%) earned between a 500,000 naira and 999,999 naira and 2 (5.1%) earned above 1 million. 20 (51.3%) of the respondents had a physical impairment, and 19 (48.7%) did not. The frequency of visits in the last 10 years was low as 16 users (41%) visited the facility very rarely, 9 (23.1%) visited the facility rarely, 10 (25.6%) visited the facility occasionally while, 2 (5.1%) visited the facility frequently and 2 (5.1%) visited the facility very frequently. This implies that the facility has not really been patronised in the last 10 years.

4.1.2. *Section B: Descriptive Analysis of Satisfaction Levels for Calabar Cultural Centre.* Section B of the questionnaire assessed and examined the satisfaction level of the users in Calabar Cultural Centre. It, therefore, assessed the satisfaction level of users with vehicular movement, façade, wayfinding, functionality, exterior aesthetic appeal, flexibility, architectural narrative, transition spaces, pedestrian movement, site entrance, interior aesthetic appeal, flexibility, architectural narrative, transition spaces, pedestrian movement, site entrance, interior aesthetic appeal and accessibility. Table 4 below presents the user satisfaction level and the interpretation following the table.

Table 4. Descriptive Analysis of Satisfaction levels for Calabar Cultural Centre

	N	Mean	Std. Deviation	Rank	Range
Satisfaction Level with Vehicular Movement	39	3.6923	1.00404	1st	High
Satisfaction Level with Accessibility	39	3.0000	1.39548	2nd	Medium
Satisfaction Level with Site Entrance	39	3.0000	1.29777	3rd	
Satisfaction Level with Way finding	39	2.8462	1.13644	4th	
Satisfaction Level with Pedestrian Movement	39	2.4615	1.04746	5th	Low
Satisfaction Level with Transition Spaces	39	2.4103	1.14059	6th	
Satisfaction Level with Functionality	39	2.2564	1.06914	7th	
Satisfaction Level with Architectural Narrative	39	2.0513	1.41326	8th	
Satisfaction Level with Exterior Aesthetic Appeal	39	2.0256	1.26672	9th	
Satisfaction Level with Façade	39	1.9744	1.20279	10th	
Satisfaction Level with Flexibility	39	1.9487	.97194	11th	
Satisfaction Level with Interior aesthetic Appeal	39	1.6667	.92717	12th	
Valid N (list wise)	39				

a. Name of Cultural Centre = Calabar Cultural Centre

Descriptive statistics were conducted to show the extent to which users were satisfied with the architectural promenade. Table 4 shows the mean scores, which ranked the level of satisfaction of each sub-element in descending order. It was interpreted using the Oxford & Burry-Stock (1995) scales, which states that means ranging from 1.0 – 2.4 is low, 2.5 – 3.4 is medium, and 3.5 – 5.0 is high. As seen in Table 4 above, users are most satisfied with the vehicular movement of this facility (3.69). Three sub-elements fell in Oxford's medium range of 2.4 to 3.4. They include other sub-elements that users were satisfied with are accessibility (3.0), site entrance (3.0) and wayfinding (2.84). Three sub-elements fell in Oxford's low range of 2.4 to 3.4. They include pedestrian movement (2.46), transition spaces (2.41), functionality (2.25), Architectural narrative (2.05), Exterior aesthetic appeal (2.02), facade (1.97), flexibility (1.94) and interior aesthetic (1.66).

Table 4 indicates that users are highly satisfied with one sub-element of architectural promenade; three sub-elements have a medium satisfaction level. Users were unsatisfied with eight sub-elements of architectural promenade.

4.1.3. *Section C: Descriptive Analysis of User Experience Usability Scale for Calabar Cultural Centre.* Section C of the questionnaire assessed and examined the usability scale of the users in Calabar Cultural Centre. Table 5 below presents the descriptive analysis for user experience usability scale and the interpretation following the table.

Table 5. Descriptive Analysis of User Experience Usability Scale For Calabar Cultural Centre

	N	Mean	Std. Deviation	Rank	Range
I noticed the things around me while moving through the building	39	3.0256	1.28733	1st	Medium
I found it difficult to locate particular spaces	39	2.4872	1.27469	2nd	
I mistook a space for another	39	2.4359	1.37257	3rd	
I found that the various functions in the building were well-integrated	39	2.4359	1.42893	4th	
I found navigating through the building complex	39	2.2308	1.01207	5th	
I went to every accessible part of the building from the entrance to the exit	39	2.0513	1.07480	6th	
I lost my way while moving through the building or site	39	2.0256	.84253	7th	
Different spaces evoked certain emotions while walking through the building	39	1.8205	1.02268	8th	Low
I enjoyed walking through the building	39	1.8205	1.27469	9th	
The building had a way of leading me to different places	39	1.7949	.97817	10th	
I would like to visit here frequently	39	1.7692	1.11122	11th	
I felt connected to the building and the external environment	39	1.7436	.93803	12th	
Valid N (listwise)	39				

Name Of Cultural Centre = Calabar Cultural Centre

Descriptive statistics were conducted to show the extent of the user usability scale. Table 5 shows the mean scores, which ranked the level of agreement of each usability criteria in descending order. It was interpreted using the Oxford & Burry-Stock (1995) scales, which states that means ranging from 1.0 – 2.4 is low, 2.5 – 3.4 is medium, and 3.5 – 5.0 is high. As seen in Table 5 above, Users agree that they notice the things around them while moving through the facility (3.02). Three sub-elements fell in Oxford's medium range of 2.4 to 3.4. Include they found locating spaces difficult (2.48), various functions in the buildings were well-integrated (2.43). Eight sub elements fell in Oxford's low range of 1.0 to 2.4. They include; Navigating through the building was complex (2.23), completion rate (2.05), wayfinding (2.02), the evocation of emotions while moving through the building (1.82), enjoyability in movement (1.82), leading the users to different places (1.79), users likeability for frequency of visit (1.76), connectivity to building and external environment (1.74).

4.1.4. Section D Frequency Tables for Overall User Experience for Calabar Cultural Centre. Section D of the questionnaire assessed and examined the overall experience level of the users in Calabar Cultural Centre. It evaluates how well the Cultural Centre met the user expectations, the overall experience level, the likelihood of revisiting and the likelihood of a recommendation. Table 6 below presents the descriptive analysis for the user experience usability scale and the interpretation following the table.

Table 6. Frequency For Overall User Experience For Calabar Cultural Centre

Data	Categories	Frequency	Percent
How well did the Cultural Centre meet your expectation	Not at all	17	43.6
	Not so well	10	25.6
	Neutral	6	15.4
	Well	6	15.4
Overall Experience Level	Very Dissatisfactory	17	43.6
	Dissatisfactory	9	23.1
	Neutral	6	15.4
	Satisfactory	6	15.4
	Very Satisfactory	1	2.6
How are you to revisit this Cultural Centre if the situation was ideal	Very Unlikely	19	48.7
	Unlikely	5	12.8
	I do not know	5	12.8
	Likely	9	23.1
	Very Likely	1	2.6
How likely are you to recommend someone else to visit this Cultural Centre	1.00	20	51.3
	2.00	3	7.7
	3.00	6	15.4
	4.00	9	23.1
	5.00	1	2.6
Total copies of questionnaire shared: 39			

Out of the people who visited this facility, 69.2% stated that the Cultural Centre did not meet their expectations. 15.4% stated that the Cultural Centre met their expectations. The overall experience level of 66.7% of the users was dissatisfactory, while 18% had a satisfactory overall experience. 61.5% of the users stated that they are unlikely to visit the facility. In comparison, 25.7% stated that they are likely to visit again. 59% are not likely to recommend anyone to come there due to their experience. In comparison, 25.7% are likely to recommend others to visit.

4.1.5. Discussion and Summary. The findings of this study shows that there is an overall negative experience of architectural promenade in this facility as users are not satisfied with the architectural promenade of the space. This shows in their satisfaction level with the promenade of the space.

The satisfaction level of threshold in architectural promenade is not cumulatively satisfactory. Table 4 shows that while vehicular movement has a high satisfaction range and accessibility and wayfinding is relatively easy, the satisfaction level with the façade, exterior appeal, transition spaces, vehicular routes, and pedestrian movement is low. The architectural narrative experience is also unsatisfactory hence, this shows that the general threshold experience is low as the users are not satisfied with transition from outside to the site. The vestibule is not sensitising to most users as findings shows that most users are not satisfied with the interior appeal, building entrance and aesthetics. The architectural narrative is low hence the questioning experience is poor.

The heuristic evaluation in table 5 showed that users experience of the facility and the promenade of the facility was between a low to medium range. This showed that the questioning, and cumulative element of architectural promenade was not high and the users did not really connect to the facility.

Due to the negative user experience, the retention and recommendation rate is low hence patronage of the Calabar Cultural Centre is unlikely to increase. The study shows that there is a low patronage in Calabar Cultural Centre, Crossriver.

4.2. National Museum, Calabar User Experience Measurement of Architectural Promenade

4.2.1. Section A: Socio-Economic Characteristics Frequency Tables for National Museum, Calabar. Section A of the questionnaire assessed and examined the socio-economic characteristics of the users. It, therefore, assessed gender, age group, marital status, income level, physical impairment and frequency of visit to National Museum, Calabar. Table 7 below presents the user's biodata and the interpretation following the table.

Table 7. Socio-economic Characteristic Frequency Table for National Museum, Calabar

Bio data	Categories	Frequency	Percent
Gender	Male	23	52.3
	Female	21	47.7
Age group	Under 24 years (gen z)	22	50.0
	25-40 (millennial)	15	34.1
	41-56 (gen x)	5	11.4
	57-66(boomers ii)	2	4.5
	Less than 50,000 naira	13	29.5
Income level	50,000-99,999 naira	12	27.3
	100,000-299,999 naira	8	18.2
	300,000-499,999 naira	4	9.1
	500,000-999,999 naira	2	4.5
	Above 1 million naira	5	11.4
Physical impairment/challenge	Yes	25	56.8
	No	19	43.2
Frequency of Visit in the last 10 years	Very Rarely (1-2 times)	26	59.1
	Rarely (3-4 times)	13	29.5
	Occasionally (5-7 times)	4	9.1
	Frequently (8-10times)	1	2.3
Total copies of questionnaire shared: 44			

The result in table 7 shows the demographic characteristics of the respondents. The result shows that 23 (52.3%) users were male while 21(47.7%) were female. Based on age group, 22 (50%) respondent was below 24. 15 (34.1%) were between 25-40years, 5 (11.4%) were between 41– 56 years, only 2 (4.5%) were between 57– 66 years, no one was between 67-75, and no one was over 75 years of age.

The table also revealed on the income level of users that 13 (29.5%) earned less than 50,000 naira, 12 (27.3%) earned between 50,000 and 99,999 naira, 8 (18.2%) earned between a 100,000 naira and 299,999 naira, , 4 (9.1%) earned between a 300,000 naira and 499,999 naira and 2 (4.5%) earned between a 500,000 naira and 999,999 naira and 5 (11.4%) earned above 1 million. 25 (56.8%) of the respondents had a physical impairment, and 19 (43.2%) did not. The frequency of visits in the last 10 years was low as 26 users (59.1%) visited the facility very rarely, 13 (29.5%) visited the facility rarely, 4 (9.1%) visited the facility occasionally, while 1 (2.3%) visited the facility frequently and no one visited the facility very frequently. This implies that the facility has not been patronised in the last 10 years.

4.2.2. *Section B: Descriptive Analysis of Satisfaction Levels for National Museum, Calabar.* Section B of the questionnaire assessed and examined the satisfaction level of the users in the National Museum, Calabar. It, therefore, assessed the satisfaction level of users with vehicular movement, façade, wayfinding, functionality, exterior aesthetic appeal, flexibility, architectural narrative, transition spaces, pedestrian movement, site entrance, interior aesthetic appeal, flexibility, architectural narrative, transition spaces, pedestrian movement, site entrance, interior aesthetic appeal and accessibility. Table 8 below presents the user satisfaction level and the interpretation following the table.

Table 8. Descriptive Analysis of Satisfaction Levels for National Museum, Calabar

	N	Mean	Std. Deviation	Rank	Range
Satisfaction Level with Vehicular Movement	44	3.2045	1.39066	1st	Medium
Satisfaction Level with Façade	44	2.8864	1.18549	2nd	
Satisfaction Level with Wayfinding	44	2.7500	1.20319	3rd	
Satisfaction Level with Functionality	44	2.7273	1.08614	4th	
Satisfaction Level with Exterior aesthetic Appeal	44	2.6591	1.25648	5th	
Satisfaction Level with Flexibility	44	2.4545	1.17046	6th	
Satisfaction Level with Architectural Narrative	44	2.2500	1.27817	7th	Low
Satisfaction Level with Transition Spaces	44	2.1818	1.04041	8th	
Satisfaction Level with Pedestrian Movement	44	1.9773	1.08881	9th	
Satisfaction Level with Site Entrance	44	1.9091	.98402	10th	
Satisfaction Level with Interior aesthetic Appeal	44	1.8409	1.14004	11th	
Satisfaction Level with Accessibility	44	1.6818	.98294	12th	
Valid N (listwise)	44				

a. Name Of Cultural Centre = National Museum Calabar

Descriptive statistics were conducted to show the extent to which users were satisfied with the architectural promenade. Table 8 shows the mean scores, which ranked the level of awareness of each technology in descending order. It was interpreted using the Oxford & Burry-Stock (1995) scales, which states that means ranging from 1.0 – 2.4 is low, 2.5 – 3.4 is medium, and 3.5 – 5.0 is high. As seen in Table 8 above, six sub-elements fell in Oxford's medium range of 2.4 to 3.4. They include that users are most satisfied with the vehicular movement of this facility (3.20), facade (2.88), wayfinding (2.75), functionality (2.72), Exterior aesthetic appeal (2.65), and flexibility (2.45). Six sub-elements fell in Oxford's low range of 2.4 to 3.4. They include Architectural narrative (2.25), transition spaces (2.18), pedestrian movement (1.97), site entrance (1.90), interior aesthetic (1.84), and accessibility (1.68).

Table 8 indicates that six sub-elements have a medium satisfaction level. Users were unsatisfied with eight sub-elements of the architectural promenade.

4.2.3. *Section C: Descriptive Analysis of User Experience Usability for National Museum, Calabar.* Section C of the questionnaire assessed and examined the usability scale of the users in the National Museum, Calabar. Table 9 below presents the descriptive analysis for the user experience usability scale and the interpretation following the table.

Table 9. Descriptive Analysis of User Experience Usability Scale for National Museum, Calabar

	N	Mean	Std. Deviation	Rank	Range
I noticed the things around me while moving through the building	44	3.4091	1.20692	1st	Medium

I went to every accessible part of the building from the entrance to the exit	44	3.2045	1.47190	2nd	
I found navigating through the building complex	44	2.5455	1.17046	3rd	
I mistook a space for another	44	2.5227	1.15111	4th	
I lost my way while moving through the building or site	44	2.4318	1.35368	5th	
I found it difficult to locate particular spaces	44	2.3636	1.10160	6th	
The building had a way of leading me to different places	44	2.3182	1.36011	7th	
I found that the various functions in the building were well-integrated	44	2.2955	1.47190	8th	
I felt connected to the building and the external environment	44	2.2045	1.30437	9th	Low
I enjoyed walking through the building	44	2.0682	1.33639	10th	
Different spaces evoked certain emotions while walking through the building	44	2.0682	1.31887	11th	
I would like to visit here frequently	44	1.9318	1.22755	12th	
Valid N (listwise)	44				

a. Name Of Cultural Centre = National Museum Calabar

Descriptive statistics were conducted to show the extent of the user usability scale. Table 9 shows the mean scores, which ranked the level of agreement of each usability criteria in descending order. It was interpreted using the Oxford & Burry-Stock (1995) strategy scale, which states that mean values ranging from 1.0 – 2.4 is low, 2.5 – 3.4 is medium, and 3.5 – 5.0 is high. As seen in table 9 above, five sub-elements fell in Oxford's medium range of 2.4 to 3.4. Users agree that they notice the things around them while moving through the facility (3.40), completion rate through the building (3.20), users found Navigating through the building was complex (2.54), users mistook one place for another (2.52), wayfinding (2.43). Three sub-elements fell in Oxford's low range of 1.0 to 2.4. They include they locating spaces difficult (2.36), leading users through different places (2.3), various functions in the buildings were well-integrated (2.29), connectivity to building and external environment (2.20), the enjoyability of movement (2.06), evocation of emotions while moving through the building (2.06), users likeability for frequency of visit (1.93).

4.2.4. *Section D: Frequency Tables for Overall User Experience for National Museum, Calabar.* Section D of the questionnaire assessed and examined the overall experience level of the users in the National Museum, Calabar. It evaluates how well the cultural Centre met the user expectations, the overall experience level, the likelihood of revisiting and the likelihood of a recommendation. Table 10 below presents the descriptive analysis for the user experience usability scale and the interpretation following the table.

Table 10. Frequency Tables for Overall User Experience for National Museum, Calabar

Data	Categories	Frequency	Percent
How well did the Cultural Centre meet your expectation	Not at all	24	54.5
	Not so well	5	11.4
	Neutral	5	11.4
	Well	10	22.7
Overall Experience Level	Very	18	40.9
	Dissatisfactory		
	Dissatisfactory	10	22.7

	Neutral	5	11.4
	Satisfactory	11	25.0
How are you to revisit this Cultural Centre if the situation was ideal	Very Unlikely	20	45.5
	Unlikely	8	18.2
	I do not know	6	13.6
	Likely	8	18.2
	Very Likely	2	4.5
How likely are you to recommend someone else to visit this Cultural Centre	1.00	21	47.7
	2.00	8	18.2
	3.00	4	9.1
	4.00	9	20.5
	5.00	2	4.5
Total copies of questionnaire shared: 44			

Out of the people who visited this facility, 65.9% stated that the Cultural Centre did not meet their expectations. 22.7% stated that the Cultural Centre met their expectations. The overall experience level of 63.6% of the users was dissatisfactory, while 25% had a satisfactory overall experience. 63.7% of the users stated that they are unlikely to visit the facility, while 22.7% stated they are likely to visit again. 65.9% are not likely to recommend anyone to come there due to their experience, while 25% are likely to recommend others to visit.

4.2.5. Discussion and Summary. The findings of this study shows that there is an overall negative experience of architectural promenade in this facility as users are not satisfied with the architectural promenade of the space. This shows in their satisfaction level with the promenade of the space.

The satisfaction level of threshold in architectural promenade is not satisfactory. Table 8 shows that while navigation, wayfinding and accessibility has a medium satisfaction level, the satisfaction level with the vehicular movement, façade, exterior appeal, transition spaces, vehicular routes, and pedestrian movement is low. this shows that the general threshold experience is low as the users are not satisfied with transition from outside to the site. The vestibule is not sensitising to most users as findings shows that most users are not satisfied with the interior appeal, building entrance and aesthetics. The architectural narrative is low hence the questioning experience is poor.

The heuristic evaluation in table 9 showed that users experience of the facility and the promenade of the facility was between a low to medium range. This showed that the questioning, and cumulative element of architectural promenade was not high and the users did not really connect to the facility.

Due to the negative user experience, the retention and recommendation rate is low as shown in table 10. Hence, patronage of the National Museum, Calabar is unlikely to increase. The study shows that there is a low patronage in National Museum, Calabar.

5. Conclusion and Recommendations

The findings conclude that user experience can be measured in different ways. The user experience measurement metrics used in this study includes; usability metrics, user satisfaction, retention rate and recommendation rate. The elements of architectural promenade were broken into sub elements and the study showed that various sub-elements of architectural promenade (vehicular movement, accessibility, wayfinding, façade, functionality, flexibility, aesthetic appeal, Architectural narrative, transition spaces, pedestrian movement, site entrance, interior aesthetic and accessibility) has an impact on the overall user experience in Cultural Centres. Cultural Centres with a better promenade tend to give a better user experience. The overall user experience for Calabar Cultural Centre and National Museum, Calabar in Crossriver state is low as most users are not satisfied with the facility, do not enjoy using the facility and will not like to visit frequently or recommend people to visit.

Based on the results of the study, it is recommended that the management in charge of selected Art and Cultural Centres should make provisions to renovate and improve facilities to maximise architectural promenade to improve user experience fully. The study shows that generally that the user and narrative experience of the selected Cultural Centres is poor, and the potential of architectural promenade is not fully maximised in those facilities. Thus, architects and allied professions need to consciously consider architectural promenade in the early stage of the design of Art and Cultural Centres and other related facilities. Proper education about the concept of Architectural promenade should be given to design professionals and all other allied professionals in the Built Environment. This will ensure that informed designs and considerations are being put in place when designing. Architectural professional bodies such as the Architects Council of Nigeria (ARCON) and the Nigerian Institute of Architects (NIA) should encourage and organise seminars, workshops, and courses for professionals.

6. Areas for Further Research

This study covers the concept of architectural promenade as a visual experience. However, it does not cover other sensory experiences. Further research can be done on other sensory experiences as the overall user experience is multidimensional.

The study provided an assessment of architectural promenade in art and Cultural Centres. This is a starting point for the study of architectural promenades in various building types that have not been covered in the scope.

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References

- [1] Ahmadi, M. (2020). The experience of movement in orbital space architecture: A narrative of weightlessness. (N. Makhubu, Ed.) *Cogent Arts & Humanities*, 7(1).
- [2] Bevan, N. (2009, January). What is the difference between the purpose of usability and user experience. *Proceedings of the Workshop UXEM*.
- [3] Borishade, T. T. (2017, April). *Customer Experience Management And Loyalty In Healthcare Sector: A Study Of Selected Private Hospitals In Lagos State, Nigeria*. Paper. Ota, Ogun State, Nigeria: Covenant University .
- [4] Elsen, C., & Heylighen, A. (2014, January). Representations of sensory experiences in the early phases of architectural design: there is more than meets the eye. *Journal of Design Research*, 9(4), 239-259.
- [5] Hardy, A. (2011). The expression of movement in architecture. *The Journal of Architecture*, 16(4), 471-497.
- [6] Kochoska, J. &. (2015, April 10). The Role of the Cultural Institutions in the Civic Education. *International Journal of Science and Research (IJSR)*, 4, 1458-1462.
- [7] Lemieux, M., & Luc, P. (2019, November 30). The Role of Iconic Architecture in the Tourist Economy. Retrieved Febuary 7th, 2020, from association patrimoineaylmer: <https://associationpatrimoineaylmer.com/en/blogue/le-role-de-larchitecture-iconique-dans-leconomie-touristique/>
- [8] Louw, M. (2016). The Architectural Promenade and the Perception of Time. *South African Journal of Art History*, 31(2), 12-33.
- [9] Mosleh, A. (2019, March 26). The Experience of Movement in the Built Form and Space: A framework for movement evaluation in Architecture. *Cogent Arts & Humanities*, 6;1,, 6(1).

- [10] Orimoloye, M. T., & Oluwatayo, A. A. (2019). Spatial Design and Aural Experience in Music Schools in Lagos State. *Journal Of Physics: Conference Series*, 1378(4), 042071. doi: 10.1088/1742-6596/1378/4/042071
- [11] Patria, A., Putra, D., & Lukito, Y. N. (2018, June). The Importance of Human Experience in Architectural Design. *International Journal of Built Environment and Scientific Research*, 2(1), 47-54.
- [12] Robinson, J., Lanius, C., & Weber, R. (2017, November). The past, present, and future of UX empirical research. *Communication Design Quarterly*, 5(3).
- [13] Samuel, F. (2010). *Le Corbusier and the Architectural Promenade*. Birkhäuser.
- [14] Santoso, H., Schrepp, M., Isal, Y., Utomo, A., & Priyogi, B. (2016, January). Measuring User Experience of the Student-Centered e-Learning Environment. *Journal of Educators Online*, 13(1), 58-78.
- [15] Stase, N., & Dalia, P. (2010). Importance of Cultural Centres and community Organisations Cooperations iin the Development of Ethnic Culture in Rural Areas. *Ekonomika ir Vadyba: aktualijos ir perspektyvos*, 3(19), 103-109.
- [16] Osinusi, K. (2020). A Guide to Measuring the User Experience. Retrieved 16 October 2021, from <https://www.toptal.com/designers/ux/measuring-the-user-experience>
- [17] Kaplan, K. (2020). Council Post: How To Evaluate Your User Experience (UX) To Grow Your Business. Retrieved 16 October 2021, from <https://www.forbes.com/sites/theyec/2020/01/03/how-to-evaluate-your-user-experience-ux-to-grow-your-business/?sh=20113eb62fe3>
- [18] Cho, M., & Kim, M. (2017). Measurement of User Emotion and Experience in Interaction with Space. *Journal Of Asian Architecture And Building Engineering*, 16(1), 99-106. doi: 10.3130/jaabe.16.99
- [19] Christie, S. What are Threshold spaces in architecture - RTF | Rethinking The Future. Retrieved 16 October 2021, from <https://www.re-thinkingthefuture.com/city-and-architecture/a3170-what-are-threshold-spaces-in-architecture/>
- [20] Osinusi, K. (2020). Here's how you measure the success of a UX design project. Retrieved 17 October 2021, from <https://thenextweb.com/news/heres-how-you-measure-the-success-of-a-ux-design-project>
- [21] Pribeanu, C. (2017). A Revised Set of Usability Heuristics for the Evaluation of Interactive Systems. *Informatica Economica*. 21. 31-38. 10.12948/issn14531305/21.3.2017.03.
- [22] Krawiec, L., & Dudycz, H. (2020). A comparison of heuristics applied for studying the usability of websites. *Procedia Computer Science*, 176, 3571-3580. doi: 10.1016/j.procs.2020.09.029
- [23] Afacan, Y., & Erbug, C. (2009). An interdisciplinary heuristic evaluation method for universal building design. *Applied Ergonomics*, 40(4), 731-744. doi: 10.1016/j.apergo.2008.07.002
- [24] Oxford, R. L., & Burry-Stock, J. A. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the strategy inventory for language learning (SILL). *System*, 23(1), 1-23.