



Contents lists available at

**Journal of Environmental Management and Safety**

Journal homepage: [www.cepajournal.com](http://www.cepajournal.com)



## **ENHANCING CIRCULATION AND SECURITY IN A SHOPPING ENVIRONMENT THROUGH ARCHITECTURAL MEASURES: A CASE STUDY OF THE CONGESTED ONITSHA MAIN MARKET**

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### **ARTICLE INFO**

#### **Article history**

Received 06 September, 2021

Received in revised form 08 September, 2021

Accepted 09 September, 2021.

Available online 2<sup>nd</sup> November, 2021.

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### **ABSTRACT**

The increasing need for individuals to satisfy their daily needs has transformed shopping centres into a centre of high activity culminating in high human and vehicular movements. This movement generates congestion when they are not properly organized. Most of the existing shopping centres are faced with circulation and security challenges within the exterior of the building (site) and the interior spaces. The prevalent circulation pattern in most shopping centres lacks orderliness and clarity.

The researcher's major consideration is to study the existing human and vehicular circulation path and security in shopping centres and proffer architectural measures to deploy towards enhancing them.

Onitsha was taken as the study area and may be considered a representative of other towns in Anambra state. Descriptive survey research method was adopted in gathering information about the present conditions of shopping centres. Studies revealed poor circulation and security within shopping centre and its environment.

The final outcome of the research was evident that circulation and security in a shopping centre will provide a comfortable shopping environment for shoppers.

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#### **Keywords:**

*Circulation, security, shopping centre, shopping environment, shopper*

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## INTRODUCTION

The Nigerian economy is the biggest and fastest growing economy in Africa by third quarter of 2015. It is, therefore, imperative to have avenues to promote and support commerce in the country as is obtainable in advanced economies. It is equally imperative to also have avenues for economic and social activities, employment opportunities and tourism, commercial is one of the hubs of economic growth.

According to International Council of Shopping Centre, (2010), shopping centre is a group of retail and other commercial establishments that is planned, developed, owned and managed as a single property, typically with on-site parking provided.

In the traditional environment, markets are set out in open air with people displaying their goods in linear arrangements. In the past, rural markets were in the open; under trees, thatched roof shelters, temporary timber shops and these were mostly inadequate and exposed to the adverse effects of the weather. These markets were mostly located in village squares where people normally converge. Apart from being a forum for commercial activities, a market square in the traditional setting is a place for social cultural interactions. As a social gathering, people meet people, make friends and enhance their relationships with other people. During these periods, there is usually the problem of human and vehicular movement and circulation, especially on a market day. This is usually noticed on entry into the market and the square. Sellers as well as customers or buyers experience instances of crimes and thefts that result to loss of goods and money. At the inception of civilization, efforts have been made to modify and enhance the business of buying and selling (Aina, 2006).

Lousberg (2011) stated that, '... shopping malls are not only centres of buying, but also "highly

organized social spaces for entertainment, interaction, and other types of consumer excitement." It, therefore, means that for a business establishment to be referred to as a shopping mall and for it to perform as such, it has to provide entertainment/recreational facilities. People have to be able to come into the shopping malls for other reasons beyond their basic shopping needs.

Similarly, Hutchinson (2010), observes that ...in order to get people to buy, you have to get them there. People have to be able to come to the shopping malls, stay there for a certain duration, long enough to take in and experience what the different stores offer. This cannot be achieved by provision of shopping spaces alone.

The problem of crime and security, this is a very important aspect of the shopping administration that has been neglected and it has affected the freedom and safety of people making transactions that involve huge sums of money. Because the basic functions of the shopping mall have so much to do with money, it is very important to improve security. A shopping mall whose security is not up to standard can affect the number of shoppers visiting the mall. It is very important that the shoppers and sellers feel safe in the environment of the mall. (Cloete, 2001). People often travel hundreds of miles to shop at these regular retail shops during and after festive period because these retail shops have brands of goods and prices that are competitive.

## STATEMENT OF THE PROBLEM

The increasing need for individuals to satisfy their daily needs has transformed shopping malls into a centre of high activity culminating in high crime, human and

vehicular movements. This has generated congestions and affected the freedom and safety of people to do their shopping.

According to Azuine (2005), human circulation within a building if not properly organized tends not only to create a disorderly state but also endanger human lives, especially when there is conflict between human and vehicular circulation. He further opined that human and vehicular circulation is a major concern, because failure to achieve proper resolution of human and vehicular movement will hamper efficient operation of the centre.

Consequently, Cloete (2001) connote that shopping mall whose security is not up to standard can affect the number of shoppers visiting the mall. It is very important that the shoppers and sellers feel safe in the environment of the mall.

In view of these, one of the primary challenges in a shopping centre is achieving effective and organized circulation pattern for both human and vehicular movements and security measures

However, in Nigeria, most of the existing shopping centres are faced with circulation and security challenges. The prevalent circulation pattern lacks orderliness and clarity. The transition points are not emphasized, human and vehicular movements are conflicting, designated parking spaces are not provided, loading and offloading points are not defined, and there are generally random internal spatial relativity and improper zoning of activities. This is evident in the Onitsha main market which makes shopping tiresome.

These shortcomings are perceived to as a result of poor circulation planning and lack of security measures within the shopping centre which have been hampering their efficiency and have also failed to create the much-needed convenience.

The Architectural measure to these undesirable situations mentioned above has created the need for this research.

## **AIM OF THE STUDY**

The aim of this research is to solve the challenges facing circulation and security in a shopping centre and to plan an effective and organized circulation pattern and security measures using architectural strategies which would enhance efficiency in a shopping centre.

## **OBJECTIVES**

- To outline the problems of an unplanned circulation in a shopping environment.
- To enumerate the necessary facilities needed to enhance circulation a shopping centre.
- To consider adequate lighting points and check points in the shopping centre and its environment.
- To put security as a primary consideration.

## **SIGNIFICANCE OF STUDY**

The need for effective circulation and security measures in shopping malls cannot be inevitable. When circulation and security are neglected, it endangers human lives, properties and failure to consider its requirements and principles at the design stage would be detrimental to its functionality. Shopping mall provides entertainment/recreational facilities and people tends to come into the shopping malls for other reasons beyond their basic shopping needs. There is increasing need for a comfortable and safe shopping area.

Onitsha, as a commercial city, is a fast growing and developing urban center with increasing influx of retailers, and foreign investors. There is increasing need for a comfortable shopping area. thus, the

significance of this research is that it aims at solving the problems of circulation and security in a shopping centre.

**THE STUDY AREA**

Anambra is a state in south-eastern Nigeria. Its name is an anglicized version of the original ‘OmaMbala’, the native name of the Anambra River. The capital and seat of government is Awka. Onitsha is by far the largest urban area. The state’s theme is “Light of the nation.

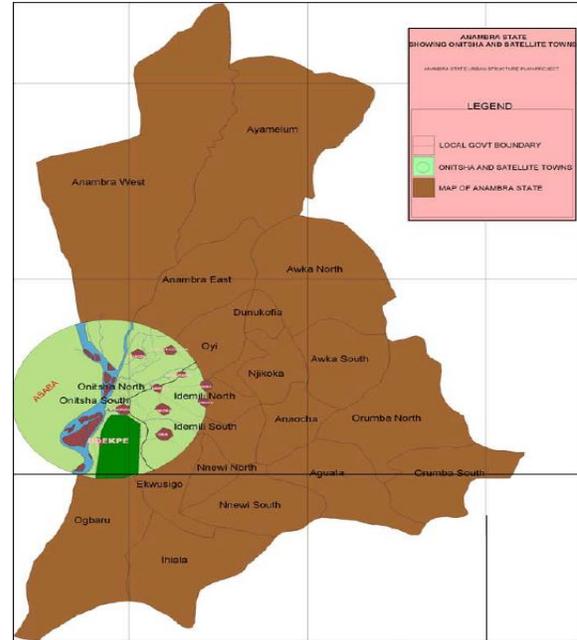


Figure 1.0 Map of Anambra showing Onitsha. Source; unhabitat, 2009

Onitsha is a fast-growing commercial city, it is located on latitude 6° 08' 30" N and longitude 6° 48' 45" E. Onitsha lies at a major east-west crossing point of the Niger River, and occupies the northernmost point of the river regularly navigable by large vessels. These factors have historically made Onitsha a major centre for trade between the coastal regions and the north, as well as between eastern and western Nigeria. Onitsha

possesses one of the very few road bridge crossings of the mile-wide Niger River and plans are in place to add a second bridge near it.

Onitsha has witnessed one of the fastest population growths in the country with a population between 500000 and 1000000. The rapid growth coincided with the period of formal occupation of the southern Nigeria

Table 1.0 A table showing the annual population growth rate of Onitsha.

Year	Males	Females	Total	% Annual Growth over the period
1921	NA	NA	8,084	-
1931	18356	8,565	26,921	23.3
1953	NA	NA	82,745	9.42
1963	NA	NA	163,032	9.7
1991	136,230	120,711	256,941	2.06
2006	135,508	126,596	261,604	0.12

Source; national population commission,2006

**RESEARCH METHODOLOGY**

The research method used in this project includes primary and secondary source of data collection. This type of research method

is aimed at exploring and investigating specific areas of phenomena in order to gain more insight into the particular problem under investigation and solutions to the problems.

Primary data includes obtaining information from direct sources such as:

- a. Carrying out site visits and studies; investigations and direct observation on the proposed project site by the author.
- b. Direct interviews and enquiries from people.
- c. Taking photographs of such visited existing facilities and producing diagrams for illustrative purposes such.

Secondary data or information method of collection is employed from sources not directly from the author such as:

- a. Use of existing literature from textbooks, publications, magazines, and unpublished materials.
- b. Use of internet for further information and data collection.
- c. Policy statement.
- d. Internationally recognized and accepted research encyclopedia.

## **CIRCULATION**

According to American planning Association, (1954) Circulation is a basic need in creating enabling and conducive shopping environment. It is the second principal aspect when designing because it allows the living and organizing of space. Selecting, planning and developing a shopping centre should be an organized and rational process that is based on adequate and accurate information (Gould, 1978).

In a shopping centre were lot of customers troop in to make their shopping, proper circulation should be provided to ensure the efficiency of the centre, Bacham (2003). He further maintains that the inherent problems of pedestrian circulation in buildings are prime generators of Architectural response. Knorr (2009) opines that circulation also means the pathways through a floor plan, these pathways are how we experience architecture, and the design of these pathways has enormous effect on the success or failure of a plan. Stating further that the circulation space ought to be as interesting as any other part of a building.

As an architectural planning process, circulation can be described as communication among differentiated spaces and between the exterior and interior of a building which may be achieved by opening in the simplest plan. However, not all building requires distinct spaces allotted to horizontal and vertical circulation.

The circulation pattern in any architectural development required for human activity is quite crucial because it is through movement that we enjoy architecture as a three-dimensional experience and also feel the space satisfaction. Without movement, architecture is merely a stage set; entertaining to look at, but with no direct relationship to user (knorr, 2009). To buttress this, simond et al, (2009), pointed out that “most constructions have meaning only to human and only as we experience them.



*Plate:1.0 An aerial view of the unplanned Onitsha main market.*

*Source: <https://www.sunnewsonline.com>. (Retrieved 4th May, 2020)*

Talking about circulation in architectural design, it addresses the built components of a functional design, including spatial planning, articulation of form, circulation systems and environmental communication (Hunter, 2010).

Most designers give circulation low priority, seeing it as a hindrance to good design or a problem to be solved with signage (Carpman and Grant, 2002). In public buildings, circulation is of high importance; for example, in buildings such as shopping centres, museums, it is key to have a floor plan that allows continuous movement while minimizing the necessity to retrace one's steps, allowing a visitor to see each work in a sequential order. Structures such as elevators, escalators, and staircases are often referred to as circulation elements, as they are positioned and designed to optimize the flow of people through a building.

Spatial planning, articulation of built elements, and circulation system design are commonly the responsibility of architects, site designers, the

engineering team, interior designers, and building owners and administrators.

Exterior circulation obstacles are common, including poor identification of building entrances and lack of clear access from parking facilities or mass transportation. Common interior circulation obstacles include the failure to make pace within a facility look unique, connecting corridors at acute or obtuse angles, and failure to provide sufficient lighting at intersections, entrance to major destinations, and landmarks (Carpman and Grant, 2002).

### **Types of circulation**

There are two main types of circulation in architecture, they include;

- a. Horizontal circulation and
- b. Vertical circulation.

These types of circulation and their requirements are shown in the diagram below.

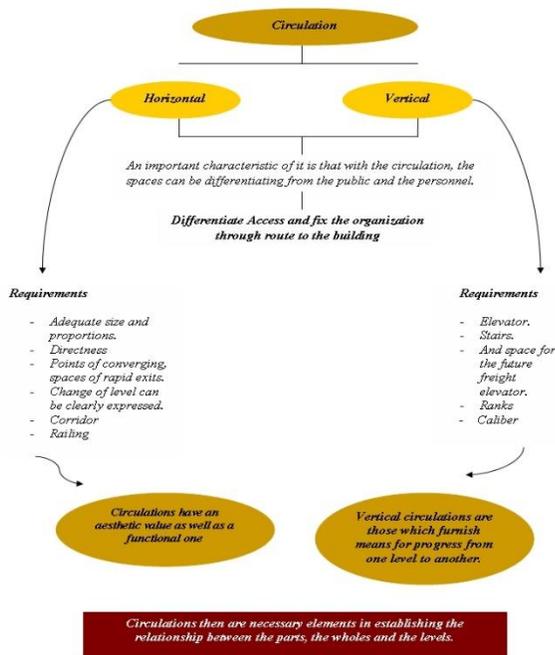


Figure 2.0 The types of circulation and their requirements.

Source; knorr blog, 2013

## SECURITY

The Homeland Security and Emergency Management Agency (2012) identified protective measures include equipment, personal and procedure designated to protect a facility against threat and mitigate the effect of an attack. When the design layout of a new or redesigned space can have the effect of shaping the perceptions and behaviour of workers, shoppers etc. on a mall are:

- Putting in the stores that appeal to youth close to entrance and food courts. This can help concentrate teenagers to one part of the mall, while stores appealing to older shoppers can be located in the other side of the mall.
- Narrow and dead-end corridors should be avoided. Such corridors are perfect spots for robberies and they get little surveillance.
- All stores should be visible from a central pedestrian area, and all store entrances

should be from the same pedestrian area. Stores that have entrance from side corridors are more likely to be robbed or broken into because people in the central area are unlikely to see what is going on. Similarly, with stores looking at one central pedestrian area, there is closer monitoring of people moving around, in and out of the store.

- Minimize the number of entrances. Lower the number of entrances, easier it is to control who actually come in or leaves the mall.
- Parking lots should be well lighted and well-marked, in order to reduce fear in customers, and to reduce the opportunity for the offenders.

More so, the light in a shopping mall should create a comforting atmosphere. This environment needs to support both the needs of customers as well as support the experience of the architecture; the lighting should not take too much attention away from the shops. Use lighting to enhance shapes and architecture. Gently illuminate vertical surfaces to guide the customer (Fagerhult, 2014).

## RECOMENDATIONS

By this research, it is clear that circulation and security can be achieved through architectural measures such as spatial organization, improved lighting, use of low-lying landscape shrubbery and increased security patrols and other circulation elements such as elevators, stairs, lift, way ways and corridors etc. The design has also provided better accommodation spaces for the retailers and shoppers, in a well-controlled and favourable conditions thereby improving productivity. In recent times, when shopping malls are springing up within the state, the design provides a corporate identity for the centre

Circulation system is the key organizing element of a site or building. People use circulation systems to develop a mental map of the building. The guideline includes;

- a. Develop a focal point and a system of circulation paths to help people understand where they are in the system.
- b. Distinguish paths with width/ height, material, and colour differences to assist in comprehension of the circulation system. If colour is used to determine circulation, avoid using the same set of colours for other purposes such as decoration.
- c. Use a system that has a repetition or rhythm to help people to determine intuitively where they are going and be able to anticipate destinations.
- d. Use circulation systems that lead people from node to node.
- e. Clearly distinguish place where the public is welcome and where access is restricted.
- f. Communicated the circulation system to user when they enter. In particular, vertical circulation devices such as stairs and elevators should be intuitive and perceptible.

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