



## Enhancing Wayfinding and Circulation in Shopping Mall Design

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### ABSTRACT –

Shopping malls are high-traffic environments where effective wayfinding and circulation are crucial to enhancing the overall user experience. However, these design aspects are often overlooked, leading to challenges for visitors in navigating and moving through the spaces. This study investigates the importance of wayfinding and circulation in shopping mall design, intending to provide insights to improve these elements. The research also examines the fundamental components of shopping mall design, focusing on the relationship between wayfinding and circulation, and how they can be optimized to improve users' shopping experiences and increase foot traffic. Through an analysis of design precedents, the study offers new perspectives on the characteristics of shopping malls that are currently underexplored. The findings suggest that by prioritizing intuitive wayfinding cues and efficient circulation patterns, shopping malls can foster a more enjoyable and seamless experience for visitors, ultimately driving greater engagement and commercial success.

**Keywords -** *Circulation, Foot traffic, Shopping Mall Design, User experience, Wayfinding.*

### I. INTRODUCTION

A shopping mall is a vast complex that offers a wide range of stores, shops, and other companies within the same vicinity. Shopping malls are designed to provide consumers with a convenient and diverse shopping experience. They feature a variety of retailers, electronics shops, department stores, specialty stores, restaurants, and entertainment options like cinemas or arcades (Botsali, 2007)

Malls are organized into distinct sections and are anchored by major retailers or department stores. The layout is designed to encourage shoppers to explore different stores and spend time within the mall. Additionally, malls often provide several other services such as food courts, cinemas, and parking facilities to enhance the overall shopping experience.

Historically, shopping has been a social activity that depends on public spaces and interaction, dating back to ancient marketplaces (Ceylan Baba Assoc, 2017). Shopping malls in particular have evolved from these early open-air markets.



Figure 1: Ancient open-air Marketplace

Source: Said (2020)

By the late 18th and early 19th centuries, covered arcades began emerging in European cities like Paris and London, providing a more sheltered shopping experience (Frączkiewicz, 2013). One of the first precedents of a modern shopping center was the Galleria Vittorio Emanuele II in Milan, Italy, which featured elegant stores and cafés surrounding a large glass-covered arcade (Khawola & Mahmoud, 2016).

The Southdale Centre in Edina, Minnesota, built in 1956, is considered the first fully enclosed, climate-controlled shopping mall (Ceylan Baba Assoc, 2017). This design shift marked a significant turning point in mall architecture that has remained relevant. In the 1950s-1960s, suburban malls proliferated in the United States to accommodate rapid population growth and urbanization (Malec, n.d.).

By the 1970s-1980s, shopping malls became ubiquitous in the US, featuring a range of smaller retailers alongside large anchor tenants like Sears and Walmart (Ceylan Baba Assoc, 2017). In the 1990s, malls began incorporating more entertainment options like indoor amusement parks and movie theaters to attract more customers.

In the 21st century, the traditional mall model has faced challenges from e-commerce and changing consumer preferences. To remain relevant, malls have had to incorporate mixed-use components like residential spaces (Ceylan Baba Assoc, 2017).

The significance of shopping malls extends beyond just retail. Blo (1994) stated that they serve as important social hubs and must be treated as such. Malls:

- i. Function as major commercial and economic centers, bringing together diverse retailers and providing a convenient shopping experience for consumers (Ceylan Baba Assoc, 2017).
- ii. Generate employment opportunities not only within stores but also in the surrounding environment, benefiting the local community economically (Ceylan Baba Assoc, 2017).
- iii. Have developed into social gathering places that foster togetherness and socialization (Blo, 1994).
- iv. Can drive infrastructure development in surrounding areas by attracting foot traffic (Ceylan Baba Assoc, 2017).
- v. Provide a centralized marketplace that benefits retailers who may not be able to reach the same customer base as stand-alone shops (Ceylan Baba Assoc, 2017).
- vi. Encourage healthy competition between nearby stores, leading to improvements in products and services offered (Ceylan Baba Assoc, 2017).
- vii. Overall, shopping malls have evolved from simple marketplaces to become complex, multi-purpose commercial and social hubs that play a significant role in communities.

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## II. WAYFINDING AND CIRCULATION

The degree of familiarity an individual has with a specific environment plays a crucial role in shaping their wayfinding and circulation behaviors. As noted by Damiete and Anthony (2022), familiarity can significantly impact how effectively a person navigates and moves through a space. When individuals are well-acquainted with their surroundings, they can overcome basic orientation challenges more easily, allowing them to focus on navigating more complex aspects of the environment. This understanding is vital when considering how to enhance wayfinding and circulation, especially in complex environments like shopping malls. However, before delving into the strategies to improve these aspects, it is important to explore the fundamental concepts of wayfinding and circulation.

### WAYFINDING

Wayfinding is a concept that has been integral to the design of complex environments for centuries. The term has evolved, coming to refer specifically to the "navigation of one's environment" (Farr et al., 2012). Wayfinding is a dynamic and evolving field that relies on both empirical knowledge and research findings, as well as the users' ability to interact with and navigate through complex environments. Essentially, wayfinding is the process by which individuals reach their intended destinations in both natural and constructed spaces (El-Hassawi et al., 2023).

Wayfinding can be seen as a problem-solving exercise that involves the methods individuals adopt to navigate a given location. The ease with which people find their way depends on several factors, including how they perceive their environment, the accessibility of wayfinding information, their ability to orient themselves spatially, and their cognitive and information-processing capabilities (Dogu & Erkip, 2000). A well-designed wayfinding system helps users develop a clear plan for finding and recognizing their precise destination. Individuals who struggle to make decisions within intricate surroundings often have difficulty navigating these spaces effectively (Damiete & Anthony, 2022).

The most basic description of wayfinding design focuses on making urban environments easy to navigate and understand. However, effective wayfinding design goes beyond simply developing an ensemble of signage. It aims to facilitate people's interactions with space, making it easier for them to navigate and live their lives. Rather than being viewed as a separate or distinct endeavor from signage design, wayfinding should be seen as a comprehensive approach that addresses all environmental challenges that affect our ability to live our lives, offering solutions to these challenges (Paula & Firmino, n.d.).

Different individuals have varying degrees of skill when it comes to navigating complex environments. Factors influencing these skills include architectural design, the function and symmetry of buildings, the presence of open spaces, user demands, language, and information gathered from signs, as well as memories of previous visits (Paula & Firmino, n.d.). To assist individuals in navigating unfamiliar settings, the environment must provide a consistent array of clues that are easily understood. When these cues are given continuously and in a manner that is easy to interpret, people are more

likely to find their way easily. The primary goal of wayfinding is to identify these clues and use them to solve navigational challenges (Paula & Firmino, n.d.).

### **IMPORTANCE OF WAYFINDING**

In the context of shopping malls, wayfinding is a critical process that every customer must engage in. Shopping malls are among the most complex environments to navigate, along with hospitals and airports. The ability to navigate these spaces without experiencing anxiety or nervousness is essential for a positive experience (Dogu & Erkip, 2000). In these settings, visitors expect to feel secure and comfortable. Therefore, shopping malls should be designed to provide both comfort and security, with wayfinding at the core of the decisions that guide a user's movements within the mall as they shop. Although many of these decisions may seem instinctive, the shopper is continuously making choices and resolving navigational issues throughout their shopping journey.

For instance, a customer may visit multiple stores while trying to find a particular product, with these stores scattered throughout the mall. The ease with which a customer can navigate the mall not only affects their shopping experience but also has a significant impact on their overall perception of the environment. In recent years, developers have recognized that effective wayfinding strategies can have a positive impact on sales. As such, it is crucial to acknowledge that malls are complex environments where individuals often face challenges in finding their way. Providing an effective and accurate wayfinding system in shopping malls is therefore of utmost importance.

### **PRINCIPLES OF WAYFINDING**

The principles of wayfinding can be broken down into several key processes, each of which is essential for achieving the overall objective of wayfinding. According to Alam et al. (2016), these processes include orientation, path choice, route observation, and recognition of destination.

- i. Orientation involves understanding one's position relative to nearby components and the intended destination. This step can be simplified if the space is divided into more manageable, easily identifiable units.
- ii. Path choice refers to selecting a route that leads the user to the intended destination. This process is more straightforward when there are fewer options available, as shorter routes tend to be easier to navigate.
- iii. Route observation is the process of analyzing and observing the path taken, allowing the user to determine if they are moving in the intended direction. A well-defined path with clear starting, middle, and end points ensures that the user always knows where they are in the space.
- iv. Recognition of destination refers to the ability to identify the destination upon arrival. Wayfinding becomes easier if the area is marked as the intended destination.

In addition to these processes, Paula and Firmino (n.d.) outline eight principles of wayfinding that further enhance navigation in complex environments:

- i. Make each location distinct from others: Spaces within an overall layout should be distinct to facilitate cognitive mapping and orientation. Each location should serve as a landmark, providing a point of reference within the broader space.
- ii. Use of landmarks: Landmarks serve two purposes: as orientation cues and as memorials. They help users identify their location within the space and indicate the direction they are facing. Landmarks placed at decision points, where the user must choose between multiple routes, can be particularly helpful.
- iii. Use of well-structured paths: Paths should be continuous and have distinct starting, middle, and endpoints. Along their entire length, paths should confirm progress and the distance remaining to the destination.
- iv. Give each location a recognizable character and appearance: Spaces can be differentiated by their visual characteristics, such as colors, textures, forms, shapes, and other design elements. A location's unique character, whether related to its appearance or function, aids in wayfinding.
- v. Provide few options for navigation: The fewer options a user has to navigate, the easier it is for them to find their way around the area.
- vi. Sightlines: Designing spaces with clear sightlines helps guide users in the intended direction. Sightlines provide just enough information about what lies ahead, reducing doubts and encouraging movement through the space.
- vii. Use of signages: Signs should be strategically placed at decision points within complex environments. These are locations where visitors must choose whether to continue on the same path or take a different route.
- viii. Use of maps: Floor plans and maps serve as navigational aids, providing a comprehensive view of the area and enabling easy assessment of different routes. Survey views can help build a visitor's mental map, which can be expanded as they navigate the space.

### **CIRCULATION**

Circulation, in contrast, refers to the movement or flow of people within a space. Effective circulation planning involves the arrangement of areas in a way that facilitates safe and efficient movement throughout a building or site. To design environments that are practical, accessible, and user-friendly,

circulation principles must be strictly adhered to. This includes the creation of adequate hallways, passageways, stairwells, and lifts that support human movement. Circulation is essential for organizing space and can be horizontal or vertical in nature (Onuorah et al., n.d.).

### **PRINCIPLES OF CIRCULATION**

The principles of circulation include:

- i. Spatial organization: This involves arranging the components of a building in a logical manner that supports its intended use.
- ii. Wayfinding: Wayfinding principles, such as the use of landmarks, signs, and visual cues, are essential for helping people navigate and find their way within a facility.
- iii. Accessibility: Circulation pathways should adhere to universal design principles, ensuring they are accessible to people with disabilities. This may involve the inclusion of ramps, lifts, and other amenities.
- iv. Traffic flow: This principle involves studying and planning for the anticipated flow patterns within a space, taking into account factors such as peak hours, user density, and potential bottlenecks.
- v. Transition: Ensuring smooth transitions between different areas, both horizontally and vertically, is essential for providing a seamless experience for users as they move through a building.

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### **III. APPLICATION OF WAYFINDING AND CIRCULATION**

Hence, having looked at the relevant literature concerning wayfinding and circulation generally and concerning shopping malls, the following steps are vital to achieving the aforementioned problems.

#### **1. Define Key Destinations**

Determine and delineate the main points of interest inside the shopping mall, including food courts, anchor businesses, toilets, and entrances.

#### **2. Create a Clear Hierarchy**

Clearly define primary and secondary circulation channels to create a hierarchy of areas and highlight the main routes that connect to important locations and anchor stores

#### **3. Use of Consistent Signage**

Visible, consistent signs should be used across the mall to make recognition simple and they should be visible, simple, and well-lit

#### **4. Strategic Placement of Signage**

Signages should be used at decision points and should be such that they can be viewed from afar.

#### **5. Pathways should be Well Defined**

The mall should have well-marked paths that lead patrons around it, with sightlines that make it easier for shoppers to find their way around with minimal dead ends

#### **6. Use of Landmarks**

Finally, there should be recognizable landmarks or focal points—such as architectural elements, huge sculptures, or art installations—in the mall to act as navigation markers

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### **IV. RESEARCH METHODOLOGY**

This research primarily uses secondary research methods and case studies to conduct a detailed analysis. Different shopping malls from different locations (both local and international) were specifically chosen for in-depth examination, ensuring a thorough study. The analysis is grounded in secondary data drawn from journal articles and existing literature, which provides valuable insights into wayfinding and circulation. This emphasis on secondary sources and case studies helps us to better understand wayfinding and circulation in shopping malls.

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### **V. FINDINGS**

The following actions should be prioritized by not only those involved in the design of shopping malls but also key stakeholders in the retail industry within urban areas:

1. User-centric solutions should be implemented to enhance wayfinding and improve the shopping experience. This includes the use of clear signage and strategically placed directional aids.

2. Design features that highlight wayfinding elements should be incorporated to elevate the overall customer experience.
3. Additionally, authorities responsible for approving commercial buildings, such as shopping malls, should rigorously assess the circulation features to ensure thorough compliance with standards.
4. Ultimately, the comfort and convenience of shoppers should be the top priority. Therefore, all measures to ensure their comfort, including effective wayfinding, circulation, choice of building materials, and the accessibility and visibility of various mall components, should be considered.

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## VI. CONCLUSION

In conclusion, the significance of effective wayfinding and circulation systems in high-traffic public spaces like shopping malls cannot be overstated. This study sheds light on these crucial elements through reliable findings, in-depth analysis, and comprehensive discussion, all aimed at enhancing the overall shopping experience for consumers and users (Dornubari Enwin, 2016).

By examining case studies and design precedents from both local and international sources, the study investigates spatial navigation and the key factors that determine the effectiveness of these systems, with a particular focus on architectural design. Additionally, the study identifies the challenges that hinder optimal circulation and wayfinding in shopping malls, underscoring the importance of customer-centered improvements. Issues such as inadequate signage and congested areas are highlighted as barriers that need to be addressed to ensure a seamless shopping experience.

Ultimately, wayfinding and circulation are critical components of shopping mall design that demand careful attention. To enhance these aspects, it is essential to establish a functional mall design that prioritizes clear movement patterns and the efficient use of signage, ensuring a positive shopping experience for all (Paula & Firmino, n.d.).

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