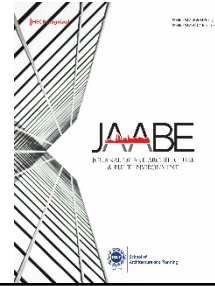





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# Comparative Analysis of Liberty Market and DHA Y-Block Market Based on Urban Marketplace Vitality Parameters

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## Abstract

Vitality is the quality that keeps any public space lively and functional throughout the day. A vibrant and dynamic marketplace is considered as the heart and soul of a city. Lahore, being a provincial capital, hosts many commercial hubs that have evolved over different periods of time and play a significant role in the city's overall urban setting. This research investigates the factors contributing to the vitality of an urban marketplace. For this purpose, Liberty Market and DHA Y-Block Market are compared. Liberty Market, located in the central area of Gulberg, has been an expanding shopping facility ever since its establishment in 1967. Its strategic location and connectivity makes it easily accessible from all parts of the city. In contrast, DHA Y-Block Market, established in 1995, serves only the residents of DHA and nearby societies. A comparative analysis of these two markets was conducted using established vitality parameters derived from comprehensive literature sources. Mixed-methods approach was employed including frequent site visits, photographic surveys, interviews with the stakeholders, and questionnaire surveys to capture user experience and opinion. Secondary data was gathered through a comprehensive literature review deduced from historical writings and digital libraries. An analytical framework was developed to thoroughly review and critically analyze the collected data. The comparative analysis revealed the strengths and weaknesses of these commercial hubs in view of vitality parameters. Based on the identified issues, specific design interventions were proposed to enhance the overall vitality of these markets.

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**Keywords:** accessibility, marketplace, parameters, public space functionality, sense of place, urban connectivity, vitality

## Introduction

The continuous presence of people in a space while doing optional activities is known as vitality (Aval, [2015](#)). In this regard, Zeng et al. ([2018](#)) grouped vitality into four categories, namely diversity, density, livability, and accessibility. Jacobs ([1961](#)) posited that this quality is provided by the presence of people, mixed-use functions, and a variety of ongoing activities in an environment. In other words, creating a center of life in urban spaces depends on social and cultural activities (Kashef, [2016](#)). Vitality in an urban marketplace can be measured on the basis of functional, visual, social, and cultural indicators. To identify the presence of vitality factors in the marketplaces of Lahore, Liberty Market and DHA Y-Block Market were scrutinized. Liberty Market was designed on an older pattern, while Y-Block Market follows a more modern concept of an urban marketplace.

## Aims and Objectives

The main objectives of this study are as follows:

1. To identify the factors responsible for causing vitality in an urban public space.
2. To document and assess the commercial setting of Liberty Market and DHA Y-Block Market.
3. To analyze Liberty Market and DHA Y-Block Market based on urban space vitality parameters (functional, social, and cultural).
4. To trace the deficiencies compromising the vitality of Liberty Market and DHA Y-Block Market and propose possible design interventions.

## Research Questions

The study addresses the following research questions:

1. What are the factors responsible for causing vitality in an urban market place?
2. How have Liberty Market and DHA Y-block Market developed and transformed in accordance with the changing urban character of the city?

3. Do Liberty Market and DHA Y-block Market possess urban space vitality factors?
4. What are the strengths of these markets in terms of vitality that could be used for the establishment of future markets?

### Literature Review

Urban marketplaces are essential spaces, deeply rooted in the local community, where local merchandise, goods, and products are traded (Ghapar et al., [2016](#)). These commercial nodes are designed as live, work, and entertainment centers to attract more people and to maximize their usage. Various strategies are employed to enhance the potential of marketplaces in order to provide better services, facilities, and the hosting of multiple events (Min et al., [2012](#)). A successful and lively marketplace is considered as the heart and soul of the city and is charged with social and economic activities (Shamsuddin, [2011](#)).

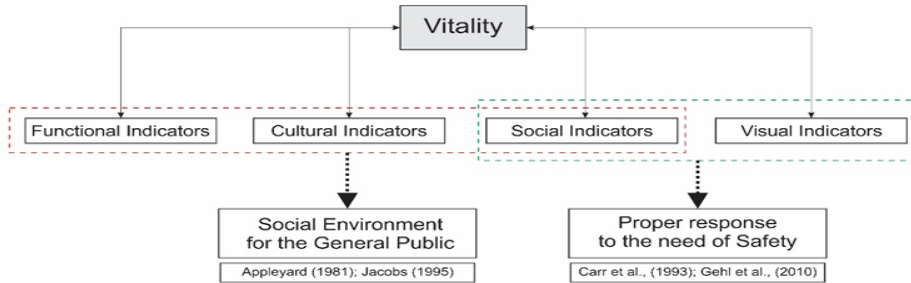
According to Paumier ([2007](#)), a dynamic urban space hosts a large number of people. Therefore, the vitality of an urban space is directly linked with social and voluntary activities happening there and their determinants. The amount of time people spend in a public space increases with the provision of a variety of functions and activities. Amenities such as public transportation, affordable services, and easy access to parking areas are essential to ensure the prolonged presence of users in a space (Gehl, [2011](#)). A "lively urban space" contains a large number of diverse people (in terms of age and sex) throughout the day, engaging in selective or social activities. Urbanists argue that the safety of any public space increases with the presence of people. Vitality in a public space creates natural surveillance and a greater sense of responsibility among its users, resulting in a safer environment (Jacobs, [1961](#)). Whyte also supports this concept by arguing that the presence of people creates a life flow that attracts more people, thereby improving environmental safety (Whyte, [1980](#)). Attracting public attention to a place involves identifying users' environmental and physical perceptions to determine the efficiency and quality of a public space (Azeri et al., [2018](#)). The presence of people and their desire to stay or even pass by a space are significantly affected if the space lacks vitality (Molavi & Jalili, [2016](#)).

Vitality experience can be expressed in terms of space, time, power, and intention (Ammaniti & Ferrari, [2013](#)). These criteria act as the most

significant factor in affecting the quality of an urban public space. A public space can be evaluated by focusing on its functional, social, visual, and cultural dimensions (Khalili & Fallah, 2018). Figure 1 shows four (04) indicators that can be used for measuring the vitality of an urban marketplace based on the theories of various urbanists.

**Figure 1**

*Indicators for Measuring the Vitality of an Urban Marketplace*



**Figure 2**

*Measures and Sub-measures of Vitality from Four (04) Complementary Perspectives*

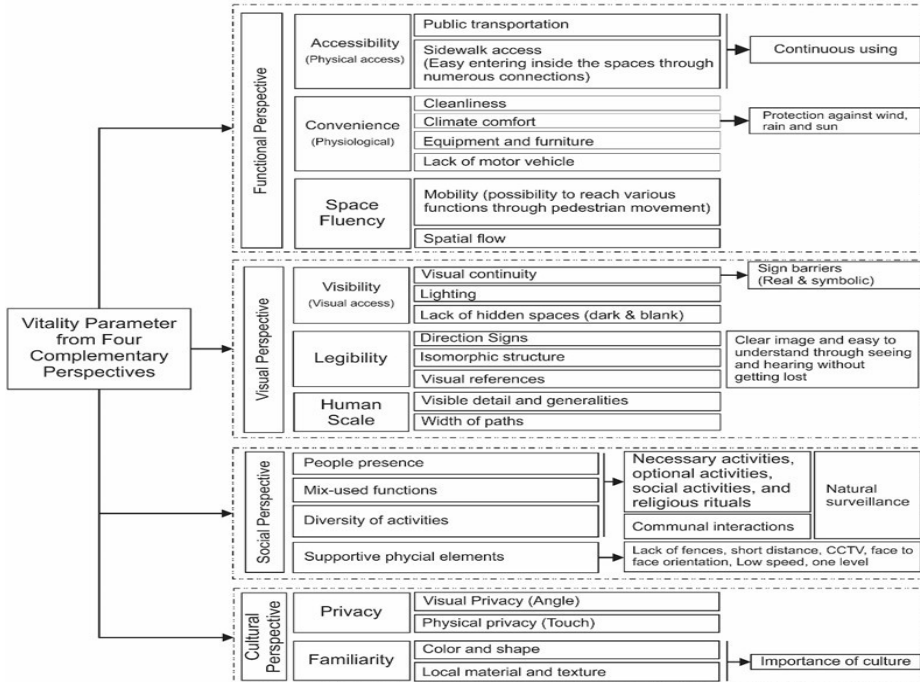


Figure 2 shows the vitality parameters from four (04) complementary perspectives derived from the literature review that can be used to measure the vitality of any urban public space.

### **Functional Indicators of Vitality**

The functional indicators of vitality are discussed below.

#### ***Accessibility***

Accessibility is defined as the extent to which transportation systems and land use enable people to reach various destinations, utilizing different transport modes.

#### ***Convenience***

*Cleanliness*: The cleanliness of a marketplace relies on the collaborative efforts of consumers and vendors. Clear pathways and organized stall setups for street vendors and hawkers are essential. Footpaths should be reserved exclusively for pedestrians, prohibiting street sellers from occupying these spaces (Litman, [2017](#)).

*Climate Comfort*: Urban areas offering thermal comfort attract more visitors, enhancing space vitality. Outdoor urban space design can significantly improve microclimatic conditions, encouraging individuals to spend more time in these areas. Approaches used to achieve thermal comfort in hot climates include modifying urban geometry, planting/vegetation, solar reflective surfaces, and provision of water bodies (Salingaros, [2011](#)).

*Equipment and Furniture*: High-quality urban furniture is essential for creating places of permanence in public areas. Street furniture provides safety, comfort, and circulation control, while meeting aesthetic needs. Elements of street furniture include shelter shades, street lighting, benches/seating, trash bins, planters, and signage (Brenner et al., [2012](#); Embarq Network, [2017](#)).

#### ***Space Fluency***

Space fluency can be described in terms of permeability which is defined as “the extent to which an environment allows people a choice of access through it, from place to place” (Boodlal, [2003](#)). Improved urban mobility (the ability to reach different locations via pedestrian movement) and spatial flow produce space fluency in a marketplace. By providing

alternate routes that make locations accessible, mobility options can be expanded (Gehl et al., [2006](#)).

### **Social Indicators of Vitality**

Social indicators of vitality are discussed below.

#### ***People's Presence***

The presence of people, mixed-use functions, and continuous activities in urban areas are key to creating vitality (Jacobs, [1961](#)). People's presence enhances the value, desirability, and distinctiveness of a location, creating a sense of control and security (Rapoport, [1994](#)). This natural surveillance promotes a safe image and encourages more people to visit. The level of interaction among users in an urban space is crucial for its vibrancy (Newman, [1997](#); Whyte, [1980](#)). The architectural style and physical area of a market significantly influence its sense of viability and people's continued presence (Van Melik et al., [2007](#); Zhou, [2012](#)).

#### ***Supportive Physical Elements***

Physical elements that facilitate engagement among strangers are vital for social vitality. Low speed of movement, short viewing distances, absence of barriers, one-level surfaces, and face-to-face orientation encourage social interaction (Brenner et al., [2012](#)). Horizontal movement is preferred in commercial settings, particularly by women. The absence of physical barriers and visible entry and exit points make exploration easier and increase the time spent in the space (Lynch, [1964](#)).

#### ***Mixed-use Functions/Diversity of Activities***

Marketplace efficiency is considerably aided by the diversity of activities and mixed-use functions. According to Zhou ([2012](#)), quantified values relevant to urban space vitality include the number of people present in the marketplace, commercial activities, and diversification of functions in the built environment. The existence of commercial activities which contribute to sociocultural exchanges is considered an important aspect in spatial vitality (Montgomery, [1995](#)). Moreover, the presence of spaces like tea stalls, cafes/eateries, and other sociocultural locations can help to shape these connections more effectively. According to Van Melik et al. ([2007](#)), these are the locations where strangers gather and socialize with each other. The presence of varied activities in marketplaces, as well as the presence of different users, promotes the impression of safety through natural

surveillance. The ability to engage in a variety of activities, particularly by women, boosts the space's vibrancy.

### **Cultural Indicators of Vitality**

Cultural indicators of vitality are discussed below.

#### ***Privacy***

Privacy can be further categorized into visual and physical privacy. Retail shops and circulation areas should be developed in accordance with the standard design guidelines of a marketplace. They must be well-planned and user-friendly in order to allow the users to interact comfortably, while maintaining their physical privacy. Visual privacy is achieved by increasing spatial enclosure. Developing a clear and definite boundary of the space enhances spatial enclosure which ensures the fulfilling of the human need to feel secure and satisfied in an urban space.

#### ***Familiarity***

Familiarity is linked to place attachment. A lack of connection to the local landscape, history, and community leads to the feeling of placelessness, diminishing urban space identity (Gieryn, [2000](#); Ujang, [2008](#)). Place identity involves distinct and memorable features influencing user perception. Protecting unique traits ensures spatial harmony and cultural significance. Local elements including food, historic facades, and cultural events contribute to street identity. Building forms reflecting the local heritage enhance social involvement and cultural continuity (Worthing & Bond, [2008](#); Zhao & Siu, [2014](#)).

### **Research Methodology**

Data on the design characteristics of convivial marketplaces was collected through principal and ancillary sources of historical literature. Further, extensive research was carried out to extract the data about the history and development process of Liberty Market and DHA Y-Block Market from Lahore Development Authority (LDA) and Defense Housing Authority (DHA) municipalities. Mixed methods were used to collect data and answer the research questions. The documentation of Liberty Market and DHA Y-Block Market was carried out by frequent site visits for scrutiny and through in-depth observation. A photographic survey was conducted to know the existing condition and land use dynamics. Unstructured interviews with market visitors and concerned officials were also conducted. The



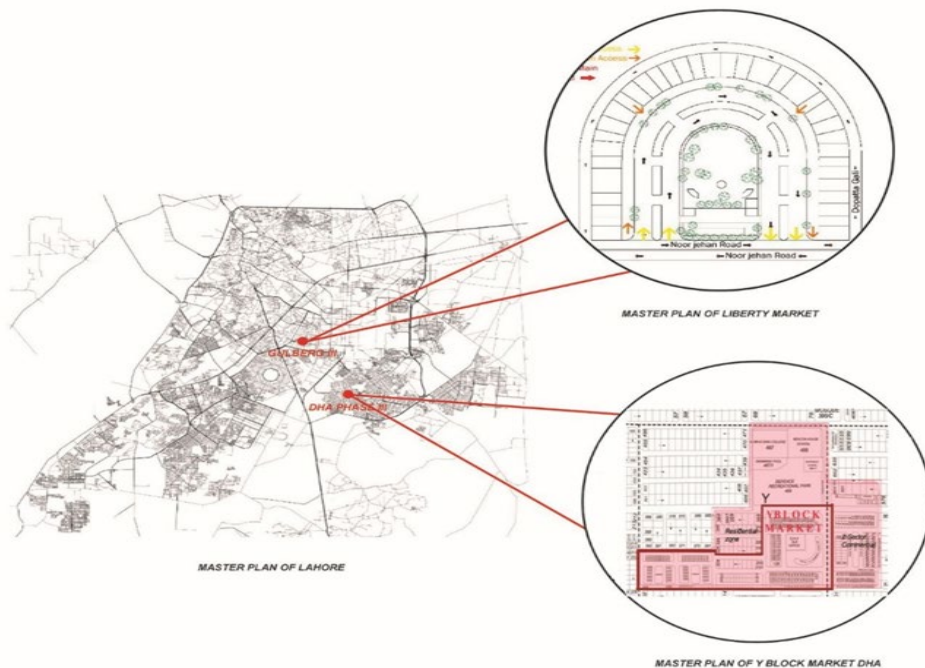
questionnaire survey carried out helped to study the experiences and opinions of the market users.

### Sites Selection for Comparative Analysis

Lahore is the provincial capital and boasts a wide range of economic and commercial activities. Apart from the historical bazaars, different markets and commercial centers continued to expand following independence in 1947 (Groote et al., 1989; Qadeer, 1983). For this research, Liberty and DHA Y-Block Market were selected to conduct a case study to ascertain the presence of vitality parameters. Liberty Market was developed in 1960s and follows a traditional design pattern. Whereas, Y-Block Market was designed later in 1990s and it follows the modern concept of marketplace design. Liberty Market, pedestrianized after its reconstruction in 2008, promotes walkability, while Y-Block Market is primarily designed for vehicular circulation. Liberty Market targets all social classes, while the Y-Block Market targets a specific class. Due to these major differences, these two markets have been selected for the comparative analysis.

**Figure 3**

*Master Plan of Lahore Highlighting the Location of Selected Sites*



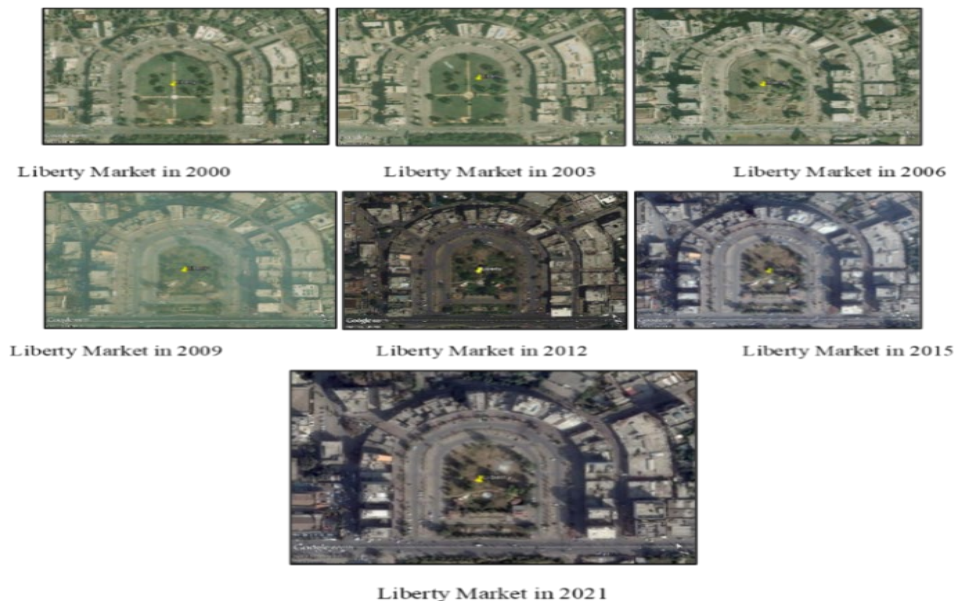
## Sites Location

Liberty Market is situated in Gulberg and covers an area of 17 acres. It was initially named Commercial Zone Gulberg-III. Later, Liberty Cinema was built close by and the market was given its present name because of its proximity to the cinema. The expansion of the market and the addition of new shops and eateries has converted it into a social cum commercial center for the residents of the city (Naz & Anjum, 2007)

Y-Block market in Sector Y of DHA Lahore is a major commercial hub featuring a range of commercial plazas, local and international clothing brands, high-end restaurants, food chains, cafes, salons, and sports clubs. The market caters to the residents of DHA and nearby areas.

### Figure 4

*Evolution Process of Liberty Market (Source: Researcher)*



## Reconstruction of Liberty Market

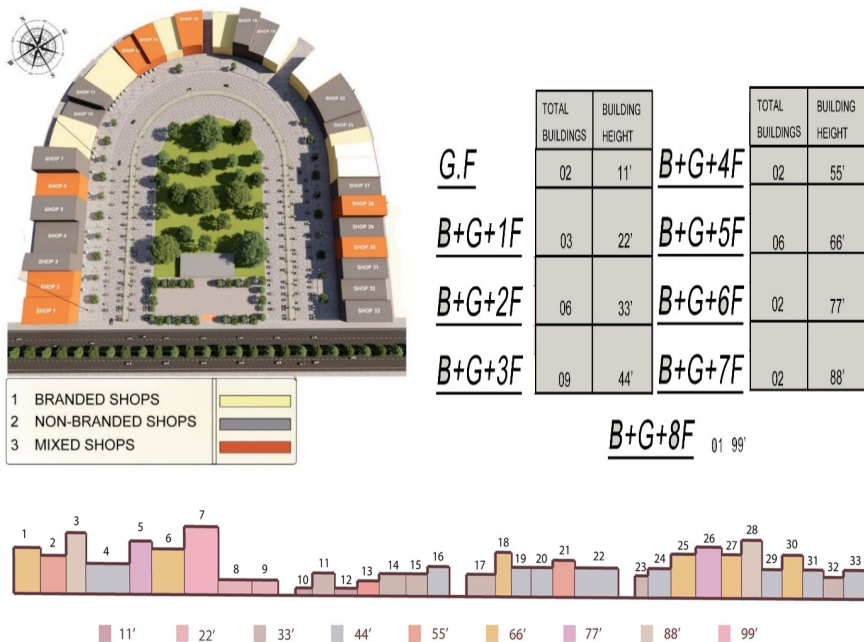
In March 2008, Liberty Market underwent reconstruction through the "Liberty Market Development Project" initiated by the Gulberg Town Council and funded by the Government of Punjab. The project aimed to revitalize the market and its surroundings which had deteriorated due to unplanned commercial developments. The plan proposed restricting

vehicular traffic on the road from United Christian Hospital (UCH) to Qarshi Park and tiling the road to signal its pedestrian-only status. Additionally, the area next to UCH was designated for a new parking lot. The project had an estimated cost of Rs. 100 million, including provisions for parking over 800 automobiles, pedestrian pathways, a dispensary, and public restrooms. This redevelopment aimed to improve the functionality and appeal of Liberty Market.

### Building Typology and Land Use Pattern in Liberty Market

Liberty Market is half-souq/bazaar, half mall in structure, with a huge plaza dominating the front area and rabbit paths (very much like those in Anarkali) that twine from within the closed structure and out to the back, leading to a number of smaller shop units, stalls, and kiosks. The site of Liberty market covers an area of approximately 17 acres. The market includes a number of shops and plazas designated to various shopping needs. The existing building typology in the market is shown in Figure 5.

**Figure 5**  
*Building Topology and Building Height Analysis in Liberty Market*



**Table 1**  
*Building Height Analysis in Liberty Market*

Total Floors	Total Buildings	Building Heights
G.F	02	11'-0"
B+G.F+1F	03	22'-0"
B+G.F+2F	06	33'-0"
B+G.F+3F	09	44'-0"
B+G.F+4F	02	55'-0"
B+G.F+5F	06	66'-0"
B+G.F+6F	02	77'-0"
B+G.F+7F	02	88'-0"
B+G.F+8F	01	99'-0"

*Note.* B=Basement, GF =Ground Floor, F=Floors

### Building Height Analysis of DHA Y-Block Market

All commercial plazas in the Y-Block Market follow strict DHA commercial bye-laws. The height of plazas ranges between 45' to 50'. The majority of the plazas are G+3 (ground floor, mezzanine, first floor, and second floor). The dimensions of 4 marla, 8 marla, and 32 marla plazas are given below.

**Table 2**  
*Plazas Dimensions in DHA Y-Block Market*

Plot	Size (Dimensions)
4 Marla commercial plazas	30' X 30'
8 Marla commercial plazas	30' X 60'
32 Marla commercial plazas	60' X 120'

**Figure 6**  
*Building Heights in DHA Y-Block Market*



## Analysis of Liberty Market and DHA Y- Block Market Based on Vitality Parameters

Vitality in an urban marketplace is the cumulative result of several factors. These factors or parameters have been broadly categorized into four (04) groups, namely functional, visual, social, and cultural, respectively. Only these parameters have been analyzed due to the research limitations.

### Analysis of the Liberty Market Based on Functional Parameters

#### *Accessibility*

Liberty Market is situated in Gulberg III, a prime location in Lahore. It is easily accessible from all parts of the city via both private and public transport. Figure 7 shows the connectivity of Liberty Market with the city network.

**Figure 7**

*Connectivity of Liberty Market with City Network*



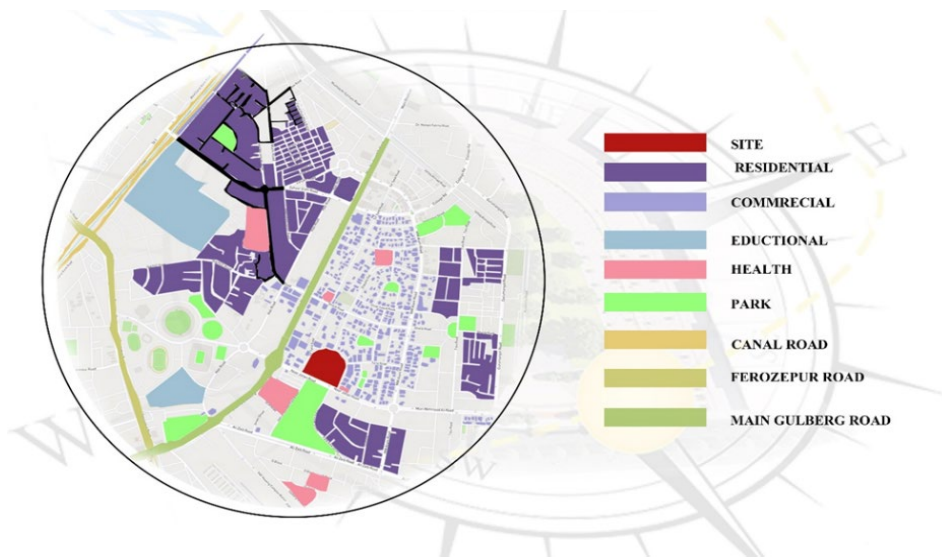
#### **Connectivity**

Liberty market faces an 80 feet wide Noor Jehan Road, connected to the Liberty Chowk towards its left and Hussain Chowk towards its right. Hussain Chowk is further linked to MM Alam Road and Mian Mehmood Ali Kasuri Road. Whereas, Liberty Chowk links Main Boulevard Gulberg to Noor Jehan Road. Main Boulevard Gulberg is further linked to Hali Road, Hafeez Kardar Road, and Ali Zaib Road. Several amenities are located in the neighborhood context of Liberty Market which includes

office buildings, parks, petrol stations, hospitals, hotels, schools, and eateries, as shown in Figure 8.

### Figure 8

*Connectivity of Liberty Market with its Neighborhood*



### Public Transport

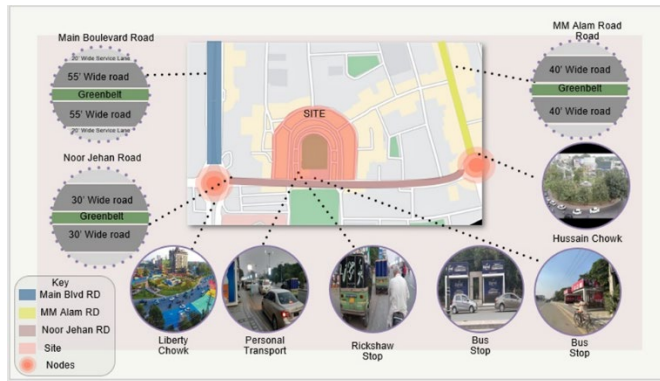
Liberty Market is highly accessible via various public transport modes including buses, rickshaws, and ride-hailing services such as Uber and Careem. Located centrally, it connects directly with Main Boulevard Gulberg and MM Alam Road through Noor Jehan Road, benefiting from a signal-free corridor, as shown in Figure 9. Additional access routes include Tariq Road, Sir Syed Road, and Ghalib Road. The market is easily accessible to residential areas, such as Gulberg, Garden Town, and Cantonment.

**Sidewalk Access.** Liberty Market is pedestrianized with a 50-foot-wide walkway in front of shops, enhancing connectivity and promoting walkability. This walkway, divided into three zones, accommodates heavy pedestrian traffic and remains universally accessible, as shown in Figure 10. Despite of this fact, vendors and hawkers sometimes obstruct pedestrian flow. Active shop frontages and proper street lighting enhance security. The walkway uses concrete pavers for stability and slip resistance. An 8-foot-

wide covered corridor provided in front of shops is crowded with stalls. If cleared, it could improve pedestrian circulation.

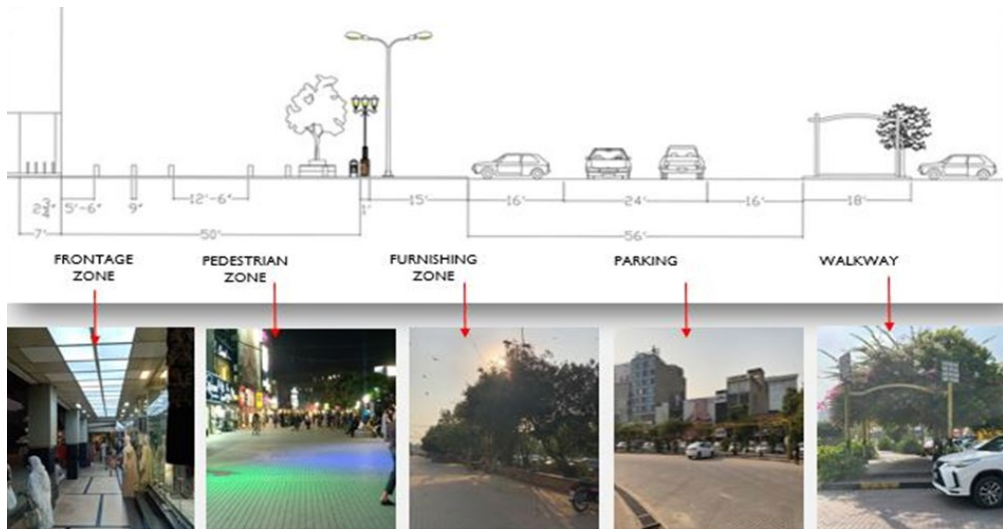
**Figure 9**

*Major Roads Connecting to Liberty Market and Public Transport Modes*



**Figure 10**

*Frontage Zone (8'-0"), Pedestrian Zone (50'-0"), and Furnishing Zone (15'-0") in Liberty Market*



### *Convenience*

**Cleanliness.** Liberty Market is clean as far as the disposal of garbage and waste is concerned. There are dustbins/waste bins placed at regular intervals in the market. Despite the municipal collection of garbage on a

daily basis, the waste bins are sometimes seen overflowing with garbage, as shown in Figure 11. Public toilets are also present in the market but lack visibility.

### Figure 11

*Condition of Waste Bins and Public Toilets in Liberty Market*



**Climate Comfort.** The design of Liberty Market is compact with a definite boundary which allows a comfortable environment by blocking out excessive solar radiation. The market street orientation is parallel to the wind direction of Lahore, as shown in Figure 12. This results in an increase in wind speed and promotes ventilation.

### Figure 12

*Street Orientation, Vegetation and Water Bodies in Liberty Market*



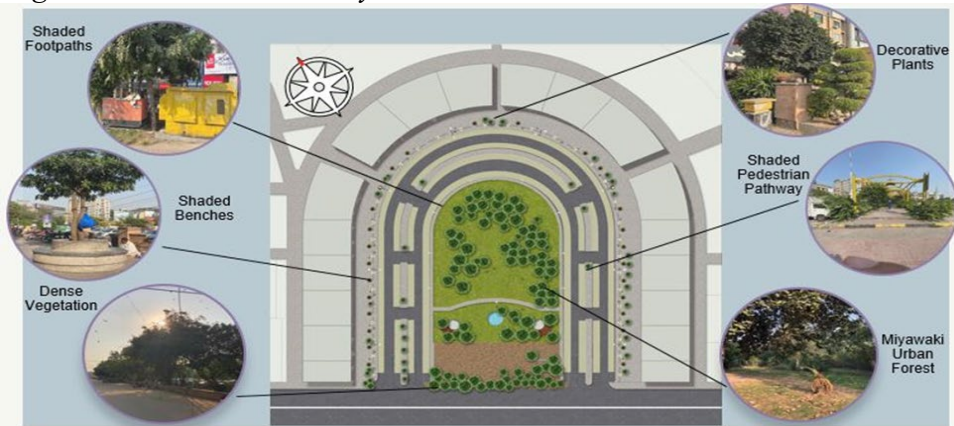
Vegetation in Liberty Market helps to reduce air temperature and also provides shade. An urban forest in the center is underutilized due to its poor accessibility, as shown in Figure 13. Light-colored materials and reflective surfaces on sidewalks and facades reduce heat absorption. However, glass



front of some plazas increase internal heat due to poor building orientation.

**Figure 13**

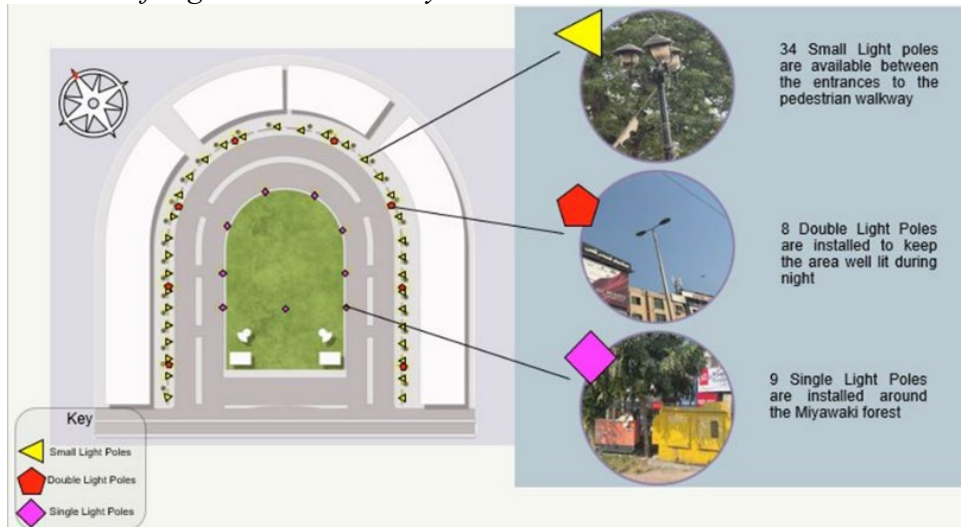
*Vegetation Pattern in Liberty Market*



**Equipment and Furniture.** Street lights (small light poles, single light poles, double light poles) are present in Liberty Market at regular intervals, as shown in Figure 14. Signage indicating the location of different shops is not present in the market. However, the central parking space of the market is equipped with signage and information boards.

**Figure 14**

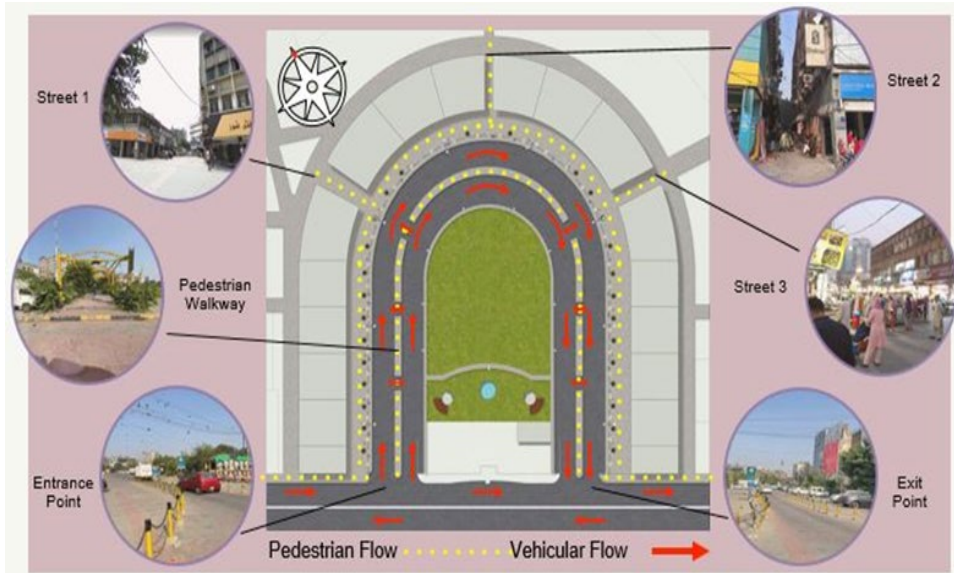
*Location of Light Poles in Liberty Market*



**Space Fluency**

Various routes have been provided to reach different destinations within the Liberty Market. There are visible entry and exit points for pedestrians and vehicles. Block sizes are also small and orthogonal in shape. Direct access from one point of the market to the other is available.

**Figure 15**  
*Pedestrian and Vehicular Movement Pattern in Liberty Market*



**Figure 16**  
*People Presence in Liberty Market during Normal Days and Festivities*



## Analysis of Liberty Market Based on Social Parameters

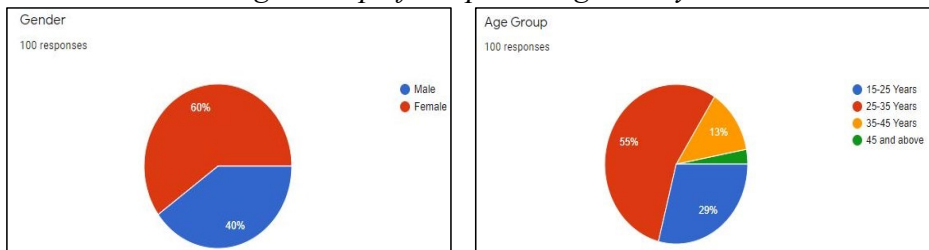
### *People Presence*

Liberty market is known to be one of the liveliest shopping destinations of Lahore. People belonging from all social classes make use of the market. People from other cities of Pakistan also come to shop here because of its popularity and lively atmosphere. Figure 16 shows the presence of people in the Market during normal days and festivities.

User flux in Liberty Market is maximum from 6 pm to 8 pm. It usually gets occupied during the nighttime and especially at the weekends. As per the results of the survey and general observation, the majority of the users visiting the market are aged between 25-35 years. The ratio of female users is higher as compared to males, as shown in Figure 17.

**Figure 17**

*Gender Ratio and Age Group of People Using Liberty Market*



**Figure 18**

*Barriers at Entrance, Low Speed of Movement, and Basement in Liberty Market*



### *Supportive Physical Elements*

Supportive physical elements that promote social interaction at Liberty Market include the absence of fences, low speed of movement, and a one-

level surface, as shown in Figure 18. The provision of pause spaces and diverse activities slows user movement, fostering social interaction. Most shops have a one-level surface which enhances eye contact and control of the space, as compared to vertical movement. A limited number of shops with basements and upper floors are less frequently used.

### ***Mixed Use Functions***

Both branded and local outlets are present in the market catering to the needs of all social classes. The presence of different types of stores along the walkways decreases the speed of movement of the users which ultimately results in an increased amount of time spent by them in the market. Open cafes and eating spaces have been provided in pocket spaces, nodes, and spaces in between the buildings, thus increasing the social activity pattern. Cultural activities and performances during important festivities also increase the market's vitality.

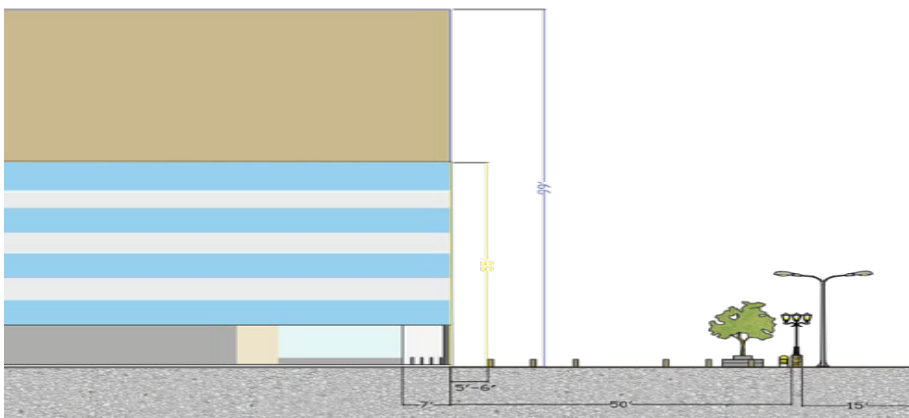
## **Analysis of the Liberty Market Based on Cultural Parameters**

### ***Privacy***

Liberty Market has a definite and clear boundary and all the commercial activities are located along the U-shaped walkway. This develops a visual enclosure giving the users a homely feeling which allows them to feel comfortable inside the market. It also gives the market a sense of identity. Liberty Market has a street width to building height ratio of 1:1 to 1:1.5, thus it has a strong sense of enclosure, as shown in Figure 19.

### **Figure 19**

*Street Width to Building Height Ratio in Liberty Market*



The buildings/shops are continuous and interlinked with no gaps existing between them. This contributes to the increased visual privacy of the market. The length of building blocks is also a major contributor to achieving visual privacy. The length of blocks in Liberty Market is 570', 240', 240', and 570' respectively, as shown in Figure 20. The blocks form 3 streets. The provision of landscape pockets also increases visual enclosure which, in turn, increases visual privacy.

**Figure 20**  
*Block Lengths in Liberty Market*



***Familiarity***

Liberty Market is one of the oldest commercial zones developed after the inception of Pakistan. Ever since its establishment in 1967, its popularity has increased with every passing day. The main reason behind this is a strong sense of place. A unique feature of Liberty Market is that it caters to the shopping needs of all social classes. Apart from providing shopping facility, it is also famous for local food and eateries that add to its vibrancy. Many social and cultural activities take place during various festivities that increase the sense of place.

**Analysis of DHAY- Block Market Based on Functional Parameters**

***Accessibility***

DHA Y-Block market is situated in phase III of Defence Housing Authority (DHA), Lahore. It is a neighborhood market that was specifically built for the residents of DHA. It is easily accessible from Walton Road, Ferozpur Road, and Ghazi Road, as shown in Figure 21. The market can be accessed via public and private transport. Several amenities are located in the neighborhood of the market including schools, colleges, public parks,

community clubs, and bus stops. Other recently developed shopping destinations, such as Packages Mall and Avenue Mall, are also situated close to the market. The construction of these malls has facilitated the flow of people from the market to the malls.

### Figure 21

*Accessibility of DHA Y-Block Market via Major Roads of Lahore*



The market is well connected to the surrounding city network and the neighborhood context. It is surrounded by residential areas and the residents of these housing societies are also among its users. Figure 22 gives a clear understanding of the surrounding city network of the Y-Block Market.

### Figure 22

*Surrounding City Network of DHA Y-Block Market*



## Public Transport

DHA Y-Block market can be accessed via public transport including buses, rickshaws, and cab services. There is a bus stop situated right next to the market, as shown in Figure 23. A few rickshaws are also seen standing at the entrance points of the market. However, there is no designated rickshaw stand. Very few people who visit the market use public transport

to access it. The majority of the users access the market with their vehicles. Ample parking space for cars and bikes has been provided in front of all shops and plazas. A wide and well-maintained network of roads make the market accessible from other DHA phases as well as the neighboring housing societies.

**Figure 23**

*Bus Stop, Rickshaws, and Cab Services Present in DHA Y-Block Market*



**Sidewalk Access.** Sidewalks are essential for smooth pedestrian flow; however, Y-Block Market lacks segregation between pedestrian and vehicular traffic, causing people to use roads during peak hours. The sidewalks lack well-defined frontage, pedestrian, and furnishing zones. The 8-foot-wide corridor is too narrow, remains partially occupied, and creates a zigzag pedestrian flow. The furnishing zone features durable, slip-resistant, concrete pavers used for parking. Whereas, Gol Market Plaza has a 4-foot pedestrian zone with no vendors or kiosks. The market adheres strictly to commercial building bye-laws, ensuring no encroachment.

**Figure 24**

*Frontage, Pedestrian, and Furnishing Zones of DHA Y-Block Market*



A proper drainage system exists in DHA Y-Block Market. Drains can be seen along the sidewalks which remain universally accessible at some points where ramps have been provided due to level differences. These sidewalks are equipped also with street furniture, such as light poles and information boards; however, they are not equipped with any benches. Owing to the presence of active shop frontages and light poles, they are secure to walk. Figure 25 shows the drainage system, ramp, and curb extensions in the market.

**Figure 25**

*Drainage System, Ramp, and Curb Extensions in DHA Y-Block Market*



### *Convenience*

**Cleanliness.** DHA Y-Block Market is clean as far as the disposal of garbage is concerned. Waste bins are present in the market at regular intervals, as shown in Figure 26. Garbage is collected daily by the municipality; still, heaps of garbage can be seen at some points as a result of public negligence. Vendors and hawkers are not allowed in the market which creates a smooth and unobstructed flow of pedestrians, although at the same time it compromises the vitality of the market. Also, public toilets are unavailable in the market area.

**Figure 26**

*Waste Bins in DHA Y-Block Market*

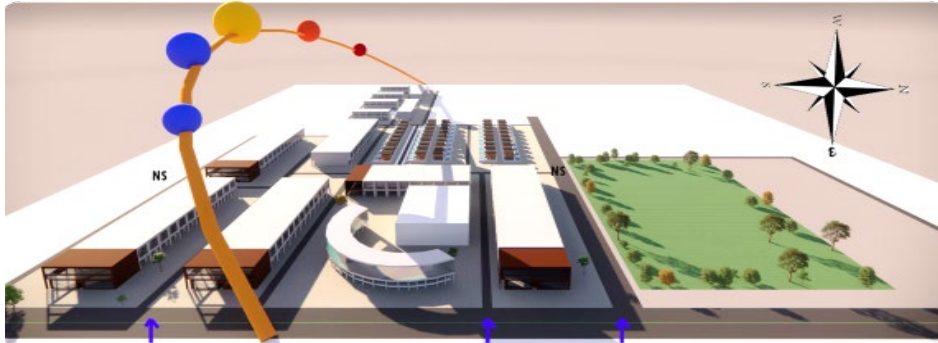




**Climate Comfort.** DHA Y-Block Market does not have a definite site boundary. The orientation of the majority of the streets in the market is North-South that offers longer shading periods, as shown in Figure 27.

**Figure 27**

*Street Orientation in DHA Y-Block Market*



Informal vegetation can be seen in the market. The vegetation pattern is not dense and no landscape pockets exist, as shown in Figure 28. Trees are planted in the parking space, some at a distance of 5-10 feet, while others are 50 feet away from each other. No waterbodies have been provided.

**Figure 28**

*Vegetation Pattern in DHA Y-Block Market*



Reflective materials and light-colored surfaces including ceramic tiles and concrete pavers are used in the market to enhance thermal comfort.

**Equipment and Furniture.** Street furniture such as light poles, shelter shades, and information boards enhance convenience in DHA Y-Block Market, as shown in Figure 29. On the contrary, a high density of electric poles creates visual clutter. The sheltered corridor in front of shops protects them from extreme weather conditions.

**Figure 29**  
*Signage, Light, and Electric Poles in the DHA Y-Block Market*



**Space Fluency**

The roads in DHA Y-Block Market follow a gridiron pattern. The market does not have a rigid hierarchy of roads and multiple route choices have been provided to reach various locations within the market. There is no cul-de-sac development which ensures a smooth spatial flow. The market has multiple entry and exit points but there is no well-defined entrance or exit. The total number of blocks in the market is 12 (Six 8 marlas, six 4 marlas), as shown in Figure 30. Block sizes are small and they have an orthogonal shape which improves the permeability of space and thus improves spatial flow. However, the narrow width of roads sometimes causes traffic congestion during peak hours.

**Figure 30**  
*Pedestrian and Vehicular Flow and Choice of Routes in DHA Y-Block Market*



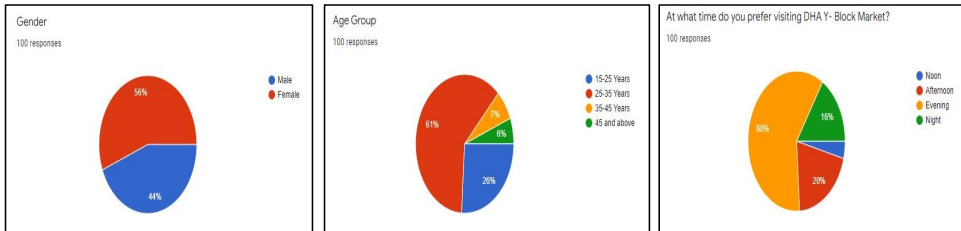
## Analysis of DHA Y-Block Market Based On Social Parameters

### *People Presence*

The current survey found that DHA Y-Block Market is visited by people belonging to all age groups. The ratio of female users in the market is slightly higher as compared to male users. The maximum users of the market are aged between 25-35 years. The market is commonly visited by people in the evening, as indicated in Figure 31.

**Figure 31**

*Gender, Age Group, and Visiting Time of DHA Y-Block Market*



The market lacks designated areas for social interaction. There's a lack of class diversity. Most visitors arrive by private transport and spend limited time in the market, resulting in an inconspicuous people presence. Peak hours are between 7-9 pm on weekdays and 6-10 pm on weekends, attracting visitors of all ages. Parking is sufficient, with 1290 car and 925 bike spaces available, minimizing parking issues. Figure 32 depicts the presence of people in the market.

**Figure 32**

*People Presence in DHA Y-Block Market*



### *Supportive Physical Elements*

Supportive physical elements in DHA Y-Block Market include the absence of fences, allowing free movement. The low speed of movement is facilitated by barriers along the streets, as shown in Figure 33. There is an

absence of pause or rest spaces for the users. While, one level surfaces promote eye contact and control, the shops have three levels, altering shopping dynamics to both horizontal and vertical patterns. These elements impact mobility and vitality within the urban space.

### Figure 33

*Physical Barriers in DHA Y-Block Market*



### *Mixed Use Functions*

DHA Y-Block market hosts a number of commercial enterprises including clothing outlets, departmental stores, banks, and restaurants. The presence of branded stores satisfies the shopping requirements of the targeted users, that is, the residents of DHA. As no kiosks or stalls are allowed in the market as per DHA bye-laws and all commercial activities take place inside the shops, no major activity pattern can be observed on the streets. There are no places of social interaction and entertainment where market users can display their culture through performances and formal activities.

### **Analysis of DHA Y-Block Market Based On Cultural Parameters**

#### *Privacy*

The building height to street width ratio in DHA Y-block market varies between 1:2 and 1:2.5, which results in the creation of an enclosed space having a good spatial enclosure. The market does not have a definite boundary but the commercial zone is segregated from the residential zone, residential zone is the central part of the market space as per the master plan. It consists of 12 commercial blocks, out of which 6 blocks have 8 marla shops and 6 blocks have 4 marla shops, as shown in Figure 34.

**Figure 34**

*Enclosed Blocks and Street Width to Building Height Ratio of DHA Y-Block Market*



Block length does not exceed 100 meters which is the limit for human vision. The length of blocks varies between 270 feet and 450 feet. Building blocks are aligned and no open gaps that may reduce visual enclosure exist between them. Placing buildings at the end of the street provides visual enclosure. In DHA Y-Block Market, the anchor stores (covering an area of 32 marla) are located at the corners of 8 marla blocks that develop spatial enclosure. Figure 35 shows a cross-section of the street-to-building height ratio in DHA Y-Block Market. All buildings are situated at the right angle to each other which also increases the sense of enclosure.

**Figure 35**

*Cross-section Depicting Street-to-Building Height Ratio in DHA Y-Block Market*



***Familiarity***

DHA Y-Block Market offers mainly brand outlets and is lacking in local food chains, cultural festivals, and shops portraying cultural diversity. Visual stops that foster social and cultural activities are also absent.

**Problems Identified in Liberty Market and DHA Y-Block Market**

Based on the analysis conducted and the results of the questionnaire survey, the following problems have been identified in Liberty Market and DHA Y-Block Market.

## **Problems Identified in Liberty Market**

The walkability of Liberty Market is hindered by several factors, such as irregular placement of kiosks and stalls on the walkway during peak hours. Furthermore, disabled or wheelchair users have limited accessibility to the market due to the absence of ramps. Street furniture is uncomfortable and often occupied by street vendors. Water bodies and restrooms are present but lack visibility and functionality. The market suffers from visual clutter due to randomly arranged billboards on building facades. Additionally, there is no architectural diversity in the building facades. Pause or rest spaces lack visual privacy.

## **Problems Identified in DHA Y-Block Market**

The frontage, pedestrian, and furnishing zones of the sidewalk are not properly designed. The corridors in front of shops are partially occupied by materials from under construction buildings and shop furniture. There are no benches or seating furniture present in the market. The vegetation pattern remains thin and landscape pockets do not exist. Also, public toilets are not available in the market. Overhead wiring systems and transformers cause visual clutter. Street lighting at night is insufficient. There are no socially interactive spaces or areas for carrying out culturally shared activities in the market.

## **Recommendations for Improving the Vitality of Marketplaces**

### ***Recommendations to Improve Functional Parameters***

To enhance marketplace accessibility, it should be well-connected to the city network and public transportation. Sidewalks must include frontage, pedestrian, and furnishing zones for seamless movement. Active building frontages should facilitate natural observation. Permeable paving can reduce the urban heat island (UHI) effect, improve tree preservation, and enhance rainwater penetration. Vegetation should consist of low-maintenance, climate-adapted, deciduous plants. Generous landscape pockets can further reduce the UHI effect and any existing urban forest should be utilized. Streets should be oriented north-south to provide longer shading periods and parallel to the wind direction to enhance ventilation. Shorter streets and smaller block sizes encourage pedestrian movement and enrich street character, while cul-de-sacs and street enclosures should be avoided to maintain urban space permeability. Short and logical walking routes provide direct access and promote pedestrianisation, while separating

pedestrian pathways from vehicular traffic can create a playful marketplace environment.

### ***Recommendations to Improve Social Parameters***

Open spaces should be designed to foster social interaction, serving as gathering spots where people can socialize and enjoy the environment. These spaces, including parks and landscape pockets, should be visible, accessible, and safe. Major intersections and nodes should be designed to create social gathering spaces, providing a sense of enclosure, place identity, and visual interest. Additionally, incorporating visual stops or vistas in marketplaces can enhance their functionality as social spaces and strengthen their significance and association for visitors.

### ***Recommendations to Improve Cultural Parameters***

A market should evoke a strong sense of place, cultural viability, appeal, and livability through its unique architecture, streetscape, public art, and cultural heritage. Identifiable buildings and structures serve as focal points, enhancing identity and belonging. Cultural and heritage architecture and landscapes contribute to local identity and serve as landmarks. Public art enriches space identity, offers navigational aids, and adds character through architectural features, lighting, seating, sculptures, murals, and water features. Utilizing rhythm, texture, and local building materials fosters a vernacular architectural character, enhancing the sense of belonging. Building materials should be chosen for their aesthetic quality, sustainability, and maintenance ease.

## **Conclusion**

In view of the analysis conducted of the collective responses of market users, it can be concluded that Liberty Market fulfills the requirements of urban space vitality parameters to a greater extent as compared to DHA Y-Block Market. The latter lacks vitality in terms of social and cultural indicators. The absence of socially inclusive spaces and areas to carry out cultural activities makes it dull and results in a reduced amount of time spent by the people in the market. Also, functional parameters are compromised as a result of narrow pedestrian walkways as well as the unavailability of seating furniture and public toilets. Improving the above mentioned aspects can make DHA Y-Block Market more attractive for the users. Liberty Market, on the other hand, is an attractive social and cultural hub. Therefore, it always remains crowded with people. It is also regarded as one of the

liveliest places in Lahore. Notably, the vitality of an urban public space is largely dependent on its social indicators. Thus, any space fulfilling these requirements is rendered more vital.

### Future Research Directions

The current research serves to identify urban public space vitality factors. It provides guidelines to urbanists, planners, and architects for the planning and development of future markets on a similar pattern. The results would also help to transform existing markets on the suggested pattern to make them more attractive for the users. The study also identifies the deficiencies that could later be addressed during the establishment of similar markets in the times ahead.

### Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

### Data Availability

The data associated with this study will be provided by the corresponding author upon request.

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