

Assessment of User Perception on Public and Private Spaces within Urban Context

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ABSTRACT

Public spaces are vital features in the urban context which offers inclusive environment for everyone in the society. Traditionally, urban public spaces (UPS) were developed by the government intended for places of interaction with the aims of social welfare and public health. In the recent past, private sector involvement in the public space provision was visible with significant changes in the form and functions influenced by market-based motives. Although commercialization or privatization aspects of public space was often debated, the user perception of the use of public spaces from ownership and access control aspects were less studied in the context of developing countries. This study aimed at identifying the attributes for which people differentiate and experience in four public spaces owned and operated by the government and private sector in the city of Colombo, Sri Lanka. The study used 35 semi-structured interviews and 119 online questionnaire surveys to identify the user defined features of ownership and access control for public space use. The results revealed that government owned and operated spaces were preferred by the users due to easy access and freedom for activities while privately owned spaces were preferred due to better infrastructure, safety, and security within. Also, each public space offered benefits to specific user profile regardless its ownership or access controls. However, the freedom and openness provided by government owned spaces were identified as important in comparison with the restrictions imposed by private sector operated public spaces. This study provides key insights for urban planners and policy makers to identify the role of private sector in the provision of effective urban spaces in the fast-growing cities as well as possible pitfalls and negative externalities created by unregulated spaces.

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1. Introduction

Public spaces are vital elements for the urban dwellers to fulfill their leisure and recreation needs. Form and function of urban

public spaces (UPS) are commonly studied in urban planning literature due to its inextricable linkages to quality of life in cities. The identity of any public space is created by not only the physical space, but also relationships between humans and the place (Ujang,

2012). Private sector intervention on the public space provision is increasingly popular in modern urban environment with significant amount of regulated public elements. Various researchers have studied positive and negative impacts of these “privatized” public spaces in the urban environment (Henry, 2008; Johnson & Glover, 2013; Bandara, Silva, & Navarathna, 2013; Torbati, 2018). At the same time, government led public space projects are considered inefficient due to vulnerabilities caused by social/ common dilemmas and negative externalities (Ling, et.al. 2019). In this context, debate lies on the promotion of private sector led public entities as the user access and activities have largely been governed by market led controls. However, public spaces created through government led planning interventions were not necessarily being used by the people (Carmona M., 2018). Meanwhile, privately owned public spaces have shown public attraction, especially among youth in Colombo, Sri Lanka (Nambuge, Peiris, & Kalugalla, 2020) and its significance for urban users have not been studied comprehensively. Therefore, it is important to understand how people perceive the differences between private sector owned and operated UPS against public sector owned entities.

Privately-owned public space offer ownership and access related restrictions to users (Bandara, de Silva, & Navarathna, 2013) while such spaces are considered contested places for recreation in cities due to land constraints and limited novel approaches by the government (Johnson & Glover, 2013). Even though the tangible prospects and constraints are explicit in nature, this paper focused on the behavioral perspective of users in using UPS in urban context. Role of private sector in facilitating the urban user needs is an important regeneration strategy of city governments (Roberts & Sykes, 1999). Therefore, user perception was considered as the determinant factor in responding to public spaces within government and private led enclosures. Since modern privately operated spaces are contested to generate common ground with government owned spaces, its importance in terms of place making principles in urban areas are yet to be explored from user perception. This paper aimed at identifying the attributes for which people differentiate and experience UPS within four different publicly and privately owned entities in Colombo, Sri Lanka. To achieve the aim, the questions intended to answer are threefold, 1. What factors determine the use of public space in urban context? 2. To what extent ownership and access controls influence on public space use? 3. Why and how user preference shaped by physical and functional attributes within urban public space? Public perception is used as the proxy to measure preference using form and functional attributes.

Rapid urbanization led economic development in Colombo, Sri Lanka experienced the private sector involvement for the provision of urban amenities in the past decade. It is visible that people were attracted to newly developed public spaces within private shopping malls while several public spaces created by public sector (government) within shopping areas attracted comparatively less crowd in various occasions. It is argued that public spaces must be governed by behavioral norms with freedom for everyone to experience and interact (Carmona, Magalhães, & Hammond, 2008). However, it is less clear that ownership of the public space and market led controls play a significant role on the use or user perception within respective domain. On most occasions, private

sector is increasingly involved in creating public spaces within commercial properties. Traditionally, public spaces are the responsibility of the government considering social welfare and public health reasons (Bandara, Silva, & Navarathna, 2013; Torbati, 2018). This paper focused on the ‘modern’ view of public space by evaluating the potential of privately owned spaces to provide the same. Meanwhile, it is important to note the divergence of traditional public space provision agenda that goes beyond health and welfare concerns of urban citizens (Nambuge, Peiris, & Kalugalla, 2020). Also, the user behavior and socio-cultural perspectives that govern the use of public spaces was evaluated for better planning of such spaces in future. Considering the Sri Lankan context, limited research has been conducted to evaluate the user perspective in relation to public space within private entities. So, this study will be unique, important, and useful for urban planning and relevant fields to improve planning decisions and policy making on objective driven public space projects.

Public space has been recognized as social construction (Lefebvre, 1978) and an important element of urban identity (Lynch, 1960). With the introduction of market-based elements into public domain, publicness within UPS was debated among scholars and policy makers. However, newly added features into UPS by private sector such as privacy, security and safety measures were attractive enough to ensure the public attraction (Carmona M., 2018; Byers, 1998). The scope of the study was to identify the public perception within access and ownership-regulated environments. To apply the conceptual understanding, four types of case studies were selected based on the ownership and access control-based criteria. Case studies were selected within Colombo city limits and other factors influenced on the public space use were considered static. Cases were classified under fully public owned, semi-public owned, semi-private owned and fully private owned spaces. Key constraints for the comprehensive understanding of user behavior were limited research in Sri Lankan context and COVID-19 pandemic restrictions during study period. Moreover, study was confined into permitted UPS and users were requested to respond with pre-pandemic usage to minimize the impact of pandemic and generalization needs.

2. Literature Review

Public spaces in cities have a long history. Market place in ancient Greece was identified as one of the historic public places where people met and exchanged ideas about socio political matters (Minton, 2006). Public spaces were studied in the past to improve the public realm (Jalaladdini & Oktay, 2012) and eventually shaped by the socio-cultural factors to support the dynamic nature of human behavior (Crouch, 2006). In Sri Lanka, traditionally public activity was emerged in traditional village fair called “Pola” and in the paddy fields (Chandrasekera, 2015). Today, it has been extended to modern public spaces within shopping centers and recreational spaces in cities (Nambuge, Peiris, & Kalugalla, 2020). Furthermore, public spaces were identified as places shared with strangers with visual and physical access (Walzer, 2006) while it was also known as places to view the unity and disagreements of the public (Henry, 2008). Functional needs of public space and its decline due to various factors have been highlighted by Jacobs (1961), Gehl (1971) and Mitchell (1995) in the 20th century.

Need of the public space in cities was identified by various authors, its use and provision has been a common debate in recent past. Access, control, behavior, and activity pattern were considered as differentiated factors of public space while private sector contributed for public space under the supervision of public sector (Leclercq, Pojani, & Bueren, 2020). But an increasing trend of creation of public spaces within private control was visible in the form of shopping malls, plazas, and restaurants. Provision of public space was identified as privatization of public rights and questioned the development from the form, functions, and sustainability perspectives (Schmidt & Németh, 2010; Carmona, Magalhães, & Hammond, 2008; Kettaf & Moscarelli, 2004). Also, the differentiation between the public spaces by public and private sector was studied under ownership and accessibility criteria (Johnson & Glover, 2013). Accordingly, public space was categorized based on ownership and the level of access as shown in Table 1.

Table 1 Categories of Urban Space

Ownership	Easy-Access control	Difficult-Access control
Private Ownership	Public-private spaces (i.e., food court)	Common space (i.e., Walking path)
Public ownership	Space for parking (i.e., Vehicle Park)	Open yard (i.e., Children Park)

(Source: Johnson & Glover, 2013)

It is no doubt that public space is an essential element for urban life. The characteristics of a ‘good’ public space include togetherness, informal surveillance, lively activity to assemble (Jacobs, 1961), integrate and invite spaces (Sennet, 1974). At the same time, public space was identified as a place of contact and place of representation of public (Kilian, 1997). In many instances, researchers have illustrated on the use of public space from its form and functional characteristics (Henry, 2008). Another view mentioned that social

behavior would be characterized by the physical space and controlled by the provision of physical and temporal controls (Mantey & Kepkowicz, 2018) .

Place-making theory described that interaction between the people and physical environment creates the place in an authentic and unselfconscious way (Relph, 1976). The way people perceive the place (as the meaning) was an important element in integrating the physical environment with public use (Chandrasekera, 2015). Relph (1976), explained the place making theory from two (02) main viewpoints namely 1. Interaction on space and 2. Essence of place. Along with the place making theory, new theoretical concepts were emerged to examine the public behavior such as placeless-ness, inside-ness, outside-ness, sense of place, and so on. (Aguila, Ghavampour, & Vale, 2019). Public perception on public space represented the mental cognition and progressive process that compare past with present (Kaplan, 1987; 1995; Aguila, Ghavampour, & Vale, 2019).

Modern lifestyles paved the way for new types of public spaces owned and operated by private sector which were demanded by the urban community (Oldenburg, 1999). Urban Public Space (UPS) provided by the private sector could decide upon the acceptable uses, users, and behaviors. Such control measures have eventually entertained selected social groups for the full access to the urban space features (Németh & Schmidt, 2011). This created the controversy on the use of public spaces and fundamental elements within the public space as a city element. As Lynch (1960), Jacobs (1961), Gehl (1971) and Mitchell (1995) stated, this “privatization” caused death of public space by the market economy controls. At the same time, a few researchers have identified the importance of privately managed public spaces due to different factors that can be accommodated by using innovative strategies by private sector (Johnson & Glover, 2013; Glover & Burton, 1998; Slack, 1999). However, differences in physical and functional activities in UPS managed by private or public entities were evident from physical and functional views. Torbati (2018) has classified UPS in to 4 categories based on its level of management functions as depicted in Table 2.

Table 2 The urban space classification based on ownership and access controls

Category	Description
Full-public, public spaces (i.e., Open spaces/ Coastal parks)	urban spaces accessible for public and fully owned and operated by the government agency or entity.
Semi-public, public spaces (i.e., Combined shopping areas within public parks/ restaurants)	urban spaces are designed and suggested for relatively distinctive groups of people. Parts of public spaces are managed by private sector where the authority of controlling the access to public is given for certain functions.
Semi-private, public spaces (i.e., Private shopping malls/ arcades)	Limits and spaces selected and designed to the special groups of the society and fully controlled by the private sector. But there are common spaces that can be accessible by public without any control.
Full-private, public spaces (i.e., Privately operated leisure parks)	Special public spaces designed for special and completely private group. The owners can determine the users with full restricted access. To enter such places, public need special permission or paid tickets.

(Source Torbati, 2018)

Based on the public space categories as mentioned in Table 2, key words that created the debate is ‘privacy’ and ‘publicity’. Deutsch (1992) argued that privacy is the power to exclude access while

publicity is the power to gain access for any space. So, the balance between privacy and publicity is a general critique that need to be tested. At the same time, this can be viewed as a struggle between

liberal view versus the conventional view of public space (Kilian, 1997). Moreover, Ho, et.al., (2021) revealed that publicness of open public space is caused by the perceived performance and satisfaction of users in the urban environment. It is noted that government owned public spaces performed better than private open spaces due to control differences between facilities and amenities in place. However, the perception of publicness is highly context specific and influenced by many confounding factors.

The differentiation between the public and private UPS are very thin today. Traditionally, ownership determined the management function of public space (Németh & Schmidt, 2011; Carmona, Magalhães, & Hammond, 2008). In Sri Lanka, publicly accessible spaces created by the private sector are mostly in the form of shopping malls, arcades, theme parks and restaurants. Next critique was the ‘publicness’ of so called quasi-public spaces. It is argued that publicness was lost with the change of ownership of public space when ownership determined the fundamental qualities of public space, access, and control (Varna & Tiesdell, 2010; Franck & Paxson, 1989). Németh & Schmidt (2011) explained that publicness of a public space was determined by ownership, accessibility and inter subjectivity. The ‘tri-axial’ model (2011), ‘Star’ model (2010) ‘OMAI’ model ‘spider’ diagram of CABE’S Spaceshaper (CABE, 2007) and the ‘place diagram’ of PPS (2000) are such models developed to understand the level of publicness in UPS. The definition of public space has its own ambiguity (Johnson & Glover, 2013) where the public can be a subjective term and can be determined from various viewpoints. For example, certain social groups (beggars or marginalized groups) can easily be excluded from public spaces while certain social groups could demand for activities affordable by a few (Kilian, 1997). Government and private sector managed public spaces are common in Sri Lankan context, especially in Colombo. Due to urbanization, the focus of government was on green cover improvement and public open space in the form of public parks and recreational parks (Bandara, de Silva, & Navarathna, 2013). Attention was also given for the public open space and its impact to city functions (Daily News, 2020) through environmental and urban social activities (Pussella, 2017; Karunananda, Rajapakse, & Rathnayaka, 2018) by the urban development agencies in Sri Lanka. Chandrasekera (2015), argued that influence of private sector on public space users and their activities was from corporate symbols which can create false sense of place due to artificial application of physical features.

Several researchers argued that socio-economic changes could be understood through changes in urban space organization (Lefebvre & Nicholson-Smith, 1991; Harvey & Martin, 1973). Mandeli (2019) argued about how urban spaces are used, providing more accurate predictions of its appropriateness for users and its broader context, and establishing guidelines and policies to transform public spheres. The planning and environmental perspective of public

space transformation was focused here and has not considered on social behavior or user perception on UPS. Ho et.al., (2021) revealed the importance of public space in high density urban environments (i.e., Hong Kong SAR, China) to provide multiple socio ecological functions on diverse user groups including elders and children. Policy implications of inclusive open spaces offered by both the government and private sector was considered vital for achieving publicness within existing public spaces. Hence, semantic research has critically pointed out the need of comprehensive research on role of private public-spaces in cities. In Sri Lanka, government agencies such as Urban Development Authority (UDA) use public funds in developing UPS while private sector has actively engaged in the same with profit motives. Therefore, this study provides insights for urban planners and designers to manage the limited resources and maximize the efficiency of urban public spaces in cities.

3. Methodology

3.1 Case Study Selection

Publicness of public spaces in urban context was determined by various factors where this research focused on access and control factors within public and private entities in urban areas. Four cases selected within Colombo city based on the classification explained in Table 2. namely: 1. Galle Face Green (GFG), 2. Arcade Independence Square (AIS), 3. Colombo City Center (CCC) and 4. Excel World Entertainment Park (EWEP). Each case study was different from one another in terms of ownership control, and accessibility. Classification of case studies according to the ownership and access factors are shown in Table 3 while the case study location map is shown in Figure 1.

Table 3 Classification of selected urban public spaces

Case Study	Classification
Galle Face Green (GFG)	Fully public access and public owned (Open green space owned and operated by the government)
Arcade Independence Square (AIS)	Semi access and publicly owned (Shopping arcade leased to the private sector by the government)
Colombo City Center (CCC)	Semi access and privately owned (Private mixed development project with public shopping areas)
Excel World Entertainment Park (EWEP)	Fully private access and privately owned (Private entertainment district with access allowed through tickets)

(Source Compiled by Author)

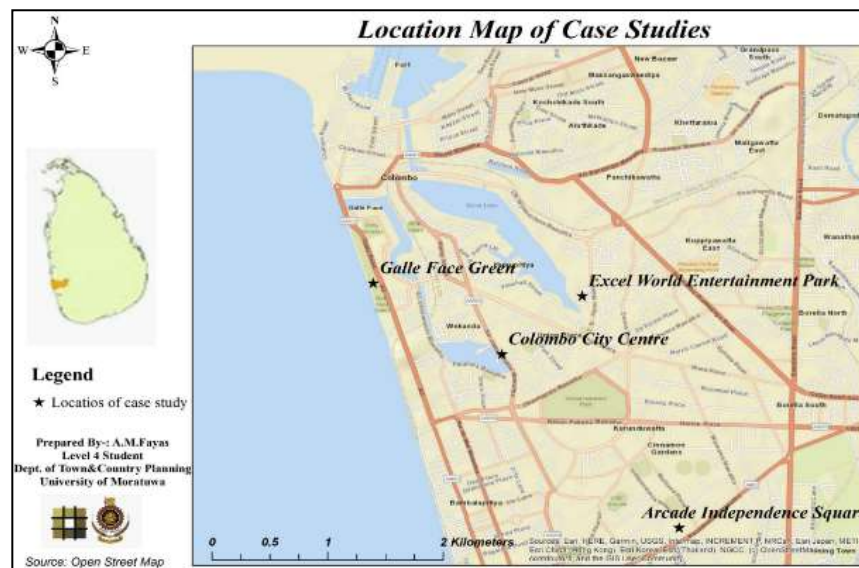


Figure 1 Selected case studies within the study area of Colombo, Sri Lanka (Source Survey Department of Sri Lanka, Open Street Maps)

3.2 Data Collection Method

Three types of data collection methods used in this study namely, physical observations, online questionnaire survey, and semi structured interviews. Physical observations were conducted in each case study to understand the form and functions of each location and to determine the differences of physical controls for accessing public spaces and the response from users. Photographs taken with the permission of the management of each case study was used to reveal the differences. Online questionnaire survey was used to understand the user behavior, purpose of visits and temporal profile of different user groups. In addition, opinion on the user preference (reasons for visit, comparative advantages, and areas of improvement) was obtained to validate the user perception findings. Semi structured interviews were conducted within each case for in-depth knowledge on UPS usage and preferences. The interviewees were selected through observational survey where author acted as an observer and participant to determine the UPS use. Content analysis was used to analyze the data through NVivo software. Themes of the analysis were derived from literature review and tested based on primary data. Primary data was collected from 119 online questionnaire responses and 35 semi-structured interviews from the users at each case study. Observation surveys at each UPS were undertaken prior to the interviews to determine the major user groups and the temporal usage of each space. Content analysis was used to identify the key themes for using the public space from user perspective. Cobweb and Space-shaper model diagram used to identify the publicness and difference between UPS.

Observation data such as photographs were used to illustrate the physical activities in each of the case studies. The analysis used mixed method approach where user behavior was measured based on the online survey, interview findings used for identification of themes of preference, and photographs with user controls were used to determine physical controls imposed in each location.

3.3 Data Analysis

3.3.1 Descriptive Analysis

The content analysis was conducted by using NVivo software for the coding process to identify user preference of 154 responses obtained through surveys and interviews. Online survey was conducted to cover the user perception of the use of public space in three categories. First, to obtain a specific user profile considering age, gender, and social status, second, to identify specific attributes for the usage of UPS within each case, third, to differentiate advantages and disadvantages of each case related to pre-defined criteria of UPS use and thereby to recognize key areas of improvement for each public space.

For the online survey, 54% of the participants were Female and over 90% of the responders were in between the age group of 18 to 55 years. 77% were less than 35 years of old and majority were visiting the case studies with their friends and family. Frequency of UPS usage within the sample and accompanied groups were shown in Figure 2 and Figure 3.

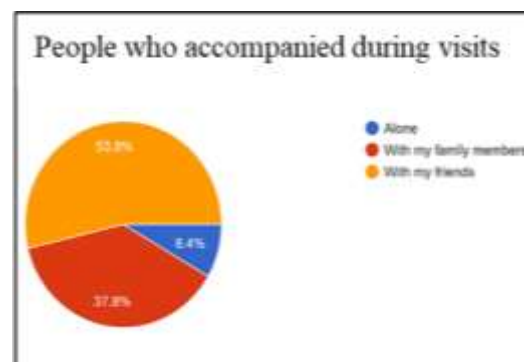


Figure 2 Social relationship on public space visitation (Source: Online Questionnaire Survey)

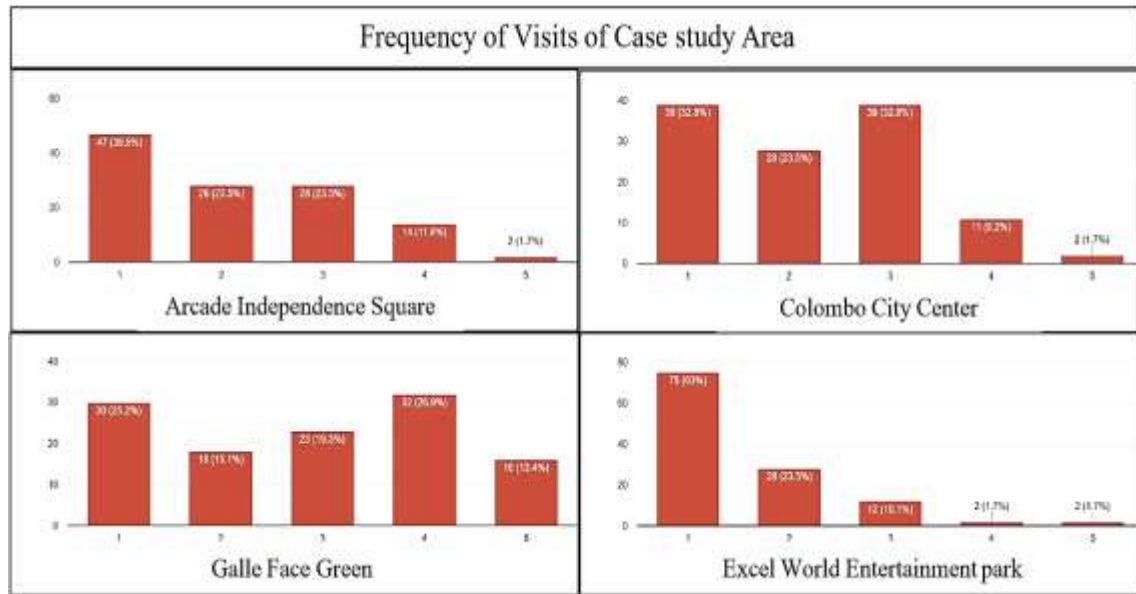


Figure 3 Visit Frequency Of Each Public Space Among Responders (Source: Online Questionnaire Survey)

Interviews were conducted by using judgmental sampling method and completed over a period of four weeks. Out of the sample, 68% of interviewees were in between the age of 18 to 35 years. Gender distribution was maintained equally and 60% of the responders were single. About 70% of the responders have visited the public space on weekly or monthly basis. However, majority of the users (87%) in the online questionnaire survey were less frequently visited EWEP in which results were dependent on interviews.

It is observed that the users and public spaces related to each other in its own way. There were multiple categories of people visited each place. The observations were conducted in different times including weekdays, weekends, and morning to evening where time was a critical factor for UPS usage. Entrances of each case study was shown in Figure 4.



Figure 4 Entrance of each case as means of access controls (Source: Author)

According to the observations, entrances showed initial control feeling in privately owned spaces. At the same time, the publicly owned spaces (AIS, GFG) gave a feeling of freedom due to non-availability of gates. The entrance was an indicator to show the control of public presence of public spaces. Publicly owned spaces indicated general and human behavior related instructions through sign boards, while privately owned spaces reflected pricing instructions, and outside food restriction. The physical form and functionality of spaces for people to sit and spend the time in each location varied in each context. The seating in

publicly owned spaces were open to all but in private spaces, access was allowed only for specific groups of people. Seating arrangement and common spaces indicated that people have freedom to do their own personal activities, privately owned spaces have provided seating but mostly for special events. So, it revealed the identifiable differences on UPS provision between privately and publicly owned spaces. The seating arrangements and directional control of the use of public elements were illustrated in Figures 5 and 6



Figure 5 Variations in Common space provision and Seating Arrangements (Source: Author)

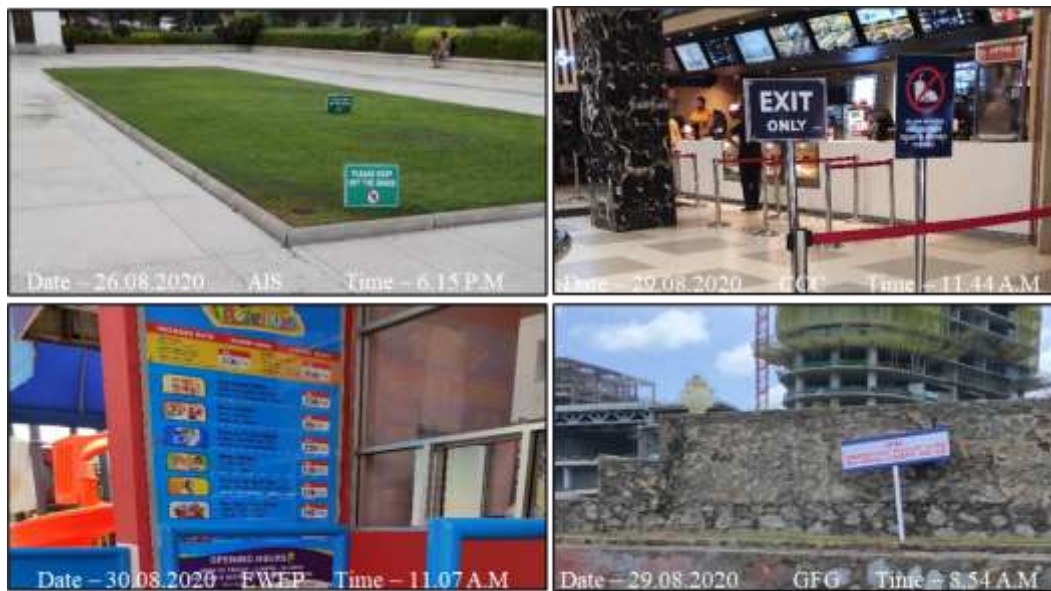


Figure 6 Sign boards as symbolic interpretation of control (Source: Author)

According to the Figure 5, GFG has the least amount of seating arrangement while users were free to arrange their own with minimum controls. However, other three case studies offer formal activities where seating arrangement was pre-defined and

utilized an orderly arrangement. In contrast, Figure 6 shows the physical control sign boards which were available in each case study. AIS and GFG (owned and operated by the government at the time of the study) has clear instructions for public use of

common areas. AIS has restricted the movement on the grass while GFG restricted the photography and videography of certain parts of the open space (Figure 6). GFG is located next to high security zone which is one of the reasons for restrictions. However, users perceived the control within the space itself due to surrounding activities. CCC and EWEP has not shown controls as indicated in the government owned case studies and the directional guidelines were shown on restaurant food pricing and lining arrangements. Nevertheless, privately owned spaces contain pre-fixed security guards who constantly monitor the users and their behavior. It was noted that CCC and EWEP imposed controls for users which put a threshold for freedom of activities taken place at each venue.

3.3.2 Word Cloud Analysis

Semi-structured interviews were transcribed as inputs for the coding purpose and then merged as themes. Themes identified through published literature was used to test the UPS preference. Exploratory design approach was followed to identify additional themes specific to local context and classified to suit the aims of the study. Survey and interview findings were used to understand the identity of each case study from user cognition and functional aspects on further use of UPS.

Word cloud analysis was used to understand the role of public space for users. Word cloud analysis results were obtained from both the semi-structured interview and online survey. It is revealed that responders considered place identity as the key preference to use each public space. Public perception on the public space within case studies based on ownership were shown in Figure 7. In addition, activities and shopping, family and friends, easy access and relaxing environment were the key words highlighted by responders.



Figure 7 Word cloud analysis of user preference at each venue (Source: Analysis findings)

The functions of each public space were different since the intended activities were different for every case study. However, users were requested to provide a comparative feedback of case studies based on two or more public spaces visited during pre-pandemic conditions. Accordingly, word cloud assessment was conducted collectively for all the case studies to view the overall perspective on functionality of urban public spaces as depicted in Figure 8.



Figure 8 Word cloud analysis of functional elements identified as important by responders (Source: Analysis findings)

According to Figure 8, most preferred functions of UPS were food (restaurants), shops (shopping experience) and play (recreational spaces). The functions of urban spaces indicated by users were taken as coding references, and the percentage of reference coverage is shown in . Functions and activities as described by the users were identified in the coding exercise and colored according to the frequency of repetition words during each interview. So, the priority given by the responders for UPS function could be understood.

According to Table 4, each responder was taken as unique functional preference indicator and word count frequency was updated for the output obtained in the Figures 7 and 8. The number of functions and activities related words/ terms from each interview was extracted and analyzed for its frequency count. Highest frequency of word count received at AIS while lowest number of preferred elements counted at EWEP. Color codes show the highest and least preference of each responder while remaining words were filtered as redundant values. Priorities of each respondent for UPS functions vary accordingly and purpose of travel and expected functional elements at each public space was different for different user groups. The target user groups for each public space are different so as their scale of preference of specific activities.

Table 4 UPS function responses based on interview reference

Responder Ref. No.	AIS	Responder Ref. No.	CCC	Responder Ref. No.	EWEP	Responder Ref. No.	GFG				
R1	14.76%	R1	2.43%	R1	7.27%	R1	11.47%				
R2	9.79%	R2	6.25%	R2	12.06%	R2	5.80%				
R3	10.41%	R3	4.08%	R3	6.74%	R3	10.14%				
R4	8.82%	R4	7.20%	R4	4.60%	R4	7.64%				
R5	7.80%	R5	3.81%	R5	10.20%	R5	4.26%				
R6	11.98%	R6	3.28%	R6	6.87%	R6	9.32%				
R7	4.25%	R7	1.31%	R7	6.13%	R7	5.94%				
R8	6.51%	R8	4.68%	R8	11.83%	R8	5.34%				
		R9	11.31%			R9	6.55%				
		R10	6.29%								
<i>Legend:</i>		Very High		High		Moderate		Low		Very Low	

Source Compiled by Author

3.3.3 Cobweb and Space-shaper Models

Matrix Coding Query (MCQ) analysis was used to calculate the user perception on various attributes of each case study. Every case study was coded using reference to identified themes. Then the Cobweb/Radar diagram was created using MCQ. The case

study areas and the factors were separately analyzed to understand the priority themes identified by the users in each UPS. Based on the preference, the factors were divided into two partitions to indicate the level of the determinant factors as the right-hand side indicated positive preference and left-hand side indicated negative preference by users (Figure 9).

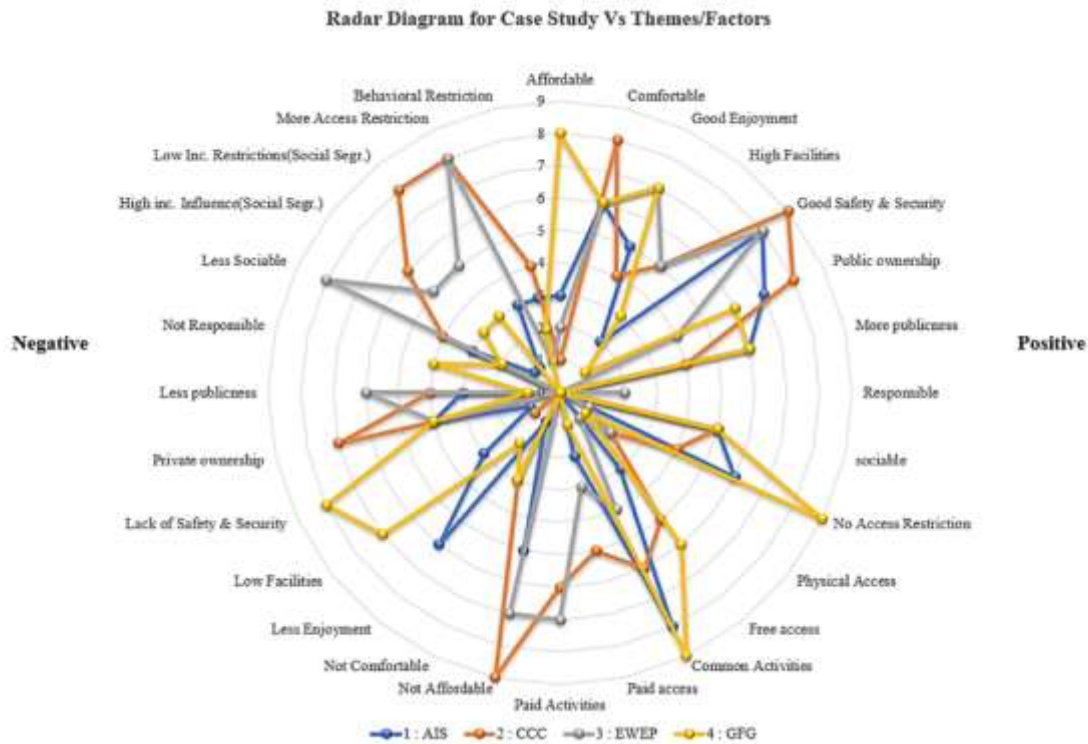


Figure 9 Cobweb Diagram of each case study with “High Demanded features” along right side of circle and “Less Demanded features” at the left side for each case study area (Source: Semi structured interview results)

Right side arc/ positive side of the Figure 9 shows aggregated ‘High Demands’ of the factors while left arc represents negative or ‘Less Demands’ of each case study. There is an identifiable difference between publicly and privately owned spaces. GFG reflected highest number of positive determinants such as common activities and full accessibility, while it depicted lack of facilities, poor safety as negative factors. Most of the themes of EWEP have spread over the negative side of the diagram which indicated its own unique private factors. At the same time, EWEP indicated on high safety and security, good facilities, good enjoyment with comfortability as positive factors for users. Users were comfortable with safety and security and indicated satisfaction on the facilities available in semi-public and semi-private spaces. However, users gave more value for public ownership as admired the public ownership than private. Access restriction, social segregation, unaffordability, and behavioral restrictions were considered negative factors in privately owned spaces.

3.3.4 Text Search Query Analysis

The role of UPS was evaluated within private and public ownership categories by using Text Search Query analysis (Figure 10). According to the interviews, users mentioned the ownership preference in each case study area and words expressed in relation to private and public ownership were accumulated and connected to identify the occurrence of the wording or references in each theme.

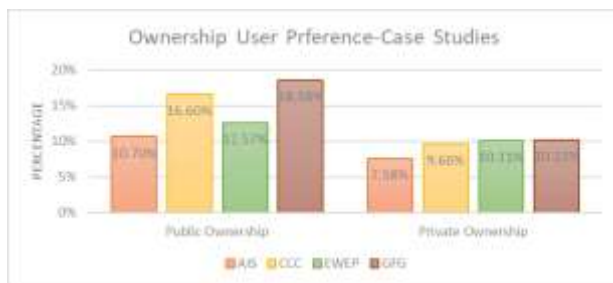


Figure 10 Overall preference for Ownership factor by the users (Source: Semi structured interviews)

According to Figure 10, public sector ownership received higher preference (58%) than private sector (38%). Contrastingly, users at of privately owned UPS (EWEP and CCC) indicated public ownership as a better option when it comes to public space provision.

3.3.5 Cluster analysis

Cluster analysis was used to identify the clusters among case studies, to differentiate the features based on similar or different characteristics. User preferences were categorized as different codes and themes/factors and Jaccard’s Coefficient Analysis was used to differentiate and analyze those preferences (farthest neighbor). Vertical Dendrogram diagram was created to show the correlation between four case study areas. Every feature from coded dataset was overlapped with other features and based on the overlapped intersection values (large union represents high relationship). Figure 11 shows the clustering of case studies based on the similarity and diversity of the sample sets.

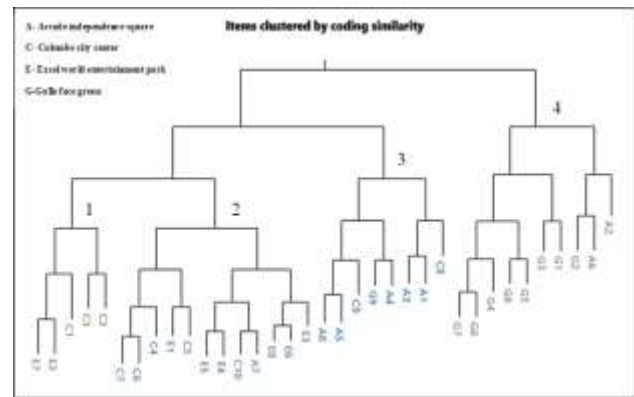


Figure 11 Vertical Dendrogram for Cluster Analysis

As per the Figure 11, four sub clusters were identified and within which three clusters were classified under first category that included AIS, CCC and EWEP. The second category included AIS and GFG. It depicts that privately owned spaces clustered among publicly owned space, hence the “privateness” of the UPS was increasing and the publicness was decreasing.

4. Discussion

Observations and word cloud analysis revealed that restaurants, shopping spaces, relaxation and recreation were the main reasons for people to visit UPS. The functional needs of public spaces included walking, sitting, studying, relaxing, eating, social events, gatherings with family or friends, etc. The functional needs were varied in case studies due to the ownership and access variations. Hierarchy chart analysis was used to understand the level of influence, where “Ownership” and “Access” factors indicated as priorities in every case study. It’s an important finding as users expected the access controls to ensure the safety and security while maintaining the social order within UPS. Social segregation was a new factor found in the study.

This study considered on the public space use indicators to check the preference of government owned and operated spaces to privately owned and operated spaces. One of the important confounding factors is the socio-economic status of the population. In this study, the preference indicators were highlighted, and social segregation was evident both in spatial and temporal views. Privately owned spaces encourage people to buy products and used sign boards like “Customers Only” to restrict the free access to public facilities within. In addition, pricing of restaurants and other product lines were unaffordable for many users as identified by Nambuge, et.al., (2020) at the AIS which raise the question of should the affordability play a role in experiencing a public space in cities? At the same time, cultural segregation and exclusiveness was visible where activities intended for specific age groups and user groups within privately owned or operated spaces. However, social segregation is a fact that needs further research with new line of resources and indicators.

Evaluation of the role of urban public space in the context of private and public setting is important where the paid entrance was considered a freedom to use the space for specific users.

Users at EWEP highlighted that paid entrance provided the ownership sense for users as no controls were there to use the UPS. Cluster analysis revealed that users have preferred semi-public spaces to provide further freedom for using the UPS. In comparison, public ownership has influenced the users to expect publicness like GFG. The way users perceive “public” ownership was an important factor. Vertical Dendrogram revealed that GFG was perceived differently than all other case studies. In comparison, GFG is a public open space with strong historical and cultural identity. Therefore, GFG is perceived by everyone as the common and known example for the freedom of use. The study used GFG as the benchmark case study for ownership and access so other case studies can be easily comparable. Nevertheless, public perception dominated on public ownership regardless of user location. This has been the case at high density urban environments in developed countries as recognized by Ho, et.al., (2021) in the context of Hong Kong. As in a developing country like Sri Lanka, affordability plays a major role in accessing the privately owned space as market forces restrict the access to specific socio-economic groups. In that context, ownership and access controls influence on urban users in Colombo as the results revealed the same.

Privateness was available in private, semi-private and semi-public spaces with different levels of access and control features. Photographic survey has also validated that physical structure of UPS determined the user perception. According to the Radar diagram (Cobweb), the ownership and access characteristics evaluated based on user reflections. Ownership preference indicated that people expect reduced access controls for effective use of UPS. Cobweb model analysis identified how public space influenced by privateness based on determinant factors. Users admired the safety and security, comfortability, and sanitary facilities within privately owned spaces which could be important factors in developing UPS in future. Therefore, this study provides important insights on the importance of public space provision by private sector in the urban development. Since private sector plays an important role in user perception of public space (Nambuge, Peiris, & Kalugalla, 2020), this study revealed the ownership and access controls matter less for the users to experience and recognize public space in cities. Also, the privatization of public space has been a common urban regeneration strategy (Roberts & Sykes, 1999) where state can encourage the private sector participation for UPS provision through effective regulation and frequent monitoring of the outcome. Also, it was revealed that user perception on public space provision needs special attention in the pre and post planning stages.

5. Conclusion

This study aimed at identifying attributes of public space offered by government and private sector in the urban context of developing countries. Four case studies with different levels of ownership and controls were selected in Colombo, Sri Lanka with strong emphasis on the user perception as the determinant factor. The results revealed that specific user groups have their own preferred factors while government owned and operated spaces still dominate the comparative preference as identified as

‘full freedom to use and explore’. However, it is noted that private sector provides sustainable public spaces which are interactive, self-managed, and offer strong sense of security and safety for users. The findings are useful for urban planners, investors as well as policy makers to adopt innovative approaches in promoting urban public space and provide inclusive solutions to every user group in the society.

This study used four case studies with semi structured interviews as the key source of information on public perception. To obtain a comprehensive picture on the user behavior, additional number of case studies and confounding factors can be used. For example, other public spaces in the vicinity, transport costs and distance to travel, and socio-economic status must be studied to obtain a generalized picture on the public preference. To obtain objective views of user behavior at public spaces, quantitative Machine Learning models and Big Data Analytics could be adopted, and Point-of-Interest (POI) features can show more realistic aspects of user behavior than surveys with large sets of data. Also, this study can be expanded to study the user perception on specific forms and functional spaces in cities ranging from open spaces to indoor recreation spaces. Moreover, temporal and climatic factors was not considered in this study and the user behavior during different times of the day and different seasons of the year could also new findings on the perception. Also, a comparison between a user defined criteria with the planning criteria in developing UPS could provide insights for planning of urban spaces. The research can develop into a common definition of public space based on the user perception and to integrate the necessary elements for public space into urban regeneration policies in city scale. Finally, this research provides the importance of business mix in developing public space where market-based inputs are necessary for future planning of public spaces.

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