Perception of Publicness of Public Spaces: Public Parks in Colombo and Sri Jayawardenapura

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Abstract

Studies have shown that "publicness" of public spaces is gradually reducing all over the world. As a result, they are losing their significance in the opportunities provided for social interaction. This has been recognized by many researchers to be a critical issue causing many adverse effects. Research has also shown that the perception of "publicness" could vary depending on an individual and his or her living environment.

This paper presents a model developed to identify the relative importance of the attributes which contribute to the perception of the publicness of public spaces. Self-explicated *conjoint analysis method was used to analyze the responses of a questionnaire survey and to develop a model to measure the publicness of public parks. Evaluation of four public parks in Colombo and in Sri Jayewardenepura is presented. Attributes such as cleanliness, calmness and security were considered to be the most important attributes contributing to the publicness of public spaces.*

Keywords: *publicness, public parks, modelling public perception, conjoint [121]analysis, Colombo, Sri Jayewardenapura, Sri Lanka, Galle Face Green, Viharamaha Devi Park, Independence Square, Diyawanna.*

Introduction

A public space becomes truly valuable only if it can facilitate opportunities for social interaction and shared cultural values and meanings. (Yuen, 1996). Many studies show that sound public spaces not only develop the physical environment of the cities but also improve the quality of life of urban residents. (Compton, 1993; Llyod & Auld, 2003; Logan & Molotch, 1987; Madanipour, 2003; Young, 1990).

Majority of such studies have been based on the necessity of public spaces being accessible to everyone at all times. However, most cities including Colombo and its suburbs with its prime focus on physical development and economic growth is paying less attention to the social dimension. According to Llyod and Auld, "An increased focus on the social outcomes of leisure spaces is needed if quality of life is to be improved for residents" (2003; 339).

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With the process of regeneration worldwide, most public spaces have become privatized and have created sanitised and regulated spaces which have proven to be barriers for a segment of people often seen as "undesirables". Furthermore it was also identified that certain public spaces act as barriers or are unwelcoming to a larger group of people such as disabled, women, elderly, children and youth. (Carmona, 2010; Marcus & Francis, 1998; Mozingo, 1984). This has not only discouraged the ongoing social interactions but has also severely limited the social values through shared meanings relating to space while deteriorating the quality of life (Llyod & Auld, 2003).

Many have examined how to identify means and ways of preventing or at least reducing such effects on new or redeveloped public spaces. However, only a handful of studies have looked at the perception of the publicness of public spaces. In the context of recent redevelopments of Colombo and its suburbs where a number of public areas are either being developed or rehabilitated with government intervention, this paucity of research can hamper our understanding of the complexity of the issues. In fact, there are no studies that identify the perception of publicness of public spaces in Colombo and its suburbs.

Campbell (1976), Lynch (1960) and many others have pointed out that different individuals perceive environments differently depending on their ethnicity, gender, age, social well being etc. Hence there is a need to understand each group's perception of publicness in order to create public spaces which are truly public.

The aim of the study is to identify the effects of various public space attributes on different users' perception of the publicness of public spaces and determine the extent to which each attribute contributes to enhance the sense of publicness.

Literature Review

An ideal public space can be defined as a space which is accessible by anyone at any time (Madanipour, 1996). Roger Scruton (1984) as cited by Beng Huat & Edwards (1992) has expanded the concept of public space as a designed location which everyone has the rights of access. Carmona, et.al. (2010) have identified four general qualities of a public spac, which are having universal access, being a neutral territory, inclusive and pluralist nature and representativeness of collectivity and sociability.

Literature shows many attributes used or recognized as contributing parameters. Some of these are; size, (Madanipour, 2003, Giles - Corti, et al., 2005), physical layout (Marcus & Francis, 1998, Pushkarev and Zupan, 1975), level of privacy (Altman, 1975), environment of the public space (Wei Zhang, 2009, Arefi & Meyers, 2003), Calmness & peacefulness (Marcus & Francis, 1998, Giles - Corti, et al., 2005), safety & security (Carmona, Tiesdell, Heath, & Oc, 2010, Manley, 2010), accessibility (Manley, 2010), permeability (Carmona, Tiesdell, Heath, & Oc, 2010, Flusly, 1997), vicinity (Marcus & Francis, 1998, Llyod & Auld, 2003), activities (Llyod & Auld, 2003), seating spaces and seating arrangement (Mehta & Bosson, 2009, Gehl, 1987), location, amenities, food and beverage outlets, level of shade (Marcus & Francis, 1998), views (Joardar and Neill 1978) and facilities for the disabled (Carmona, 2010, Manley, 2010) .

Authors Mahyar Arefi and William Meyers, in search of what is public about public space in Visakhapatnam, India, had conducted 37 extensive interviews along with cognitive mapping of urban space, using a composite group sampling as recommended by Lynch in 1991. They have

said that "*eliciting differences is a widely recognized way of studying the perception of public space*."

Oppewal and Timmermans (1999) have justified their deviation from the general methods of survey and embracing full-profile conjoint analysis method. According to Qualtrics, 2011, self - explicated conjoint analysis has advantages over the other conjoint approaches and does not require a regression analysis or aggregated solution and has been shown to provide results equal or superior to full-profile approaches, and places fewer demands on the respondents.

Methodology

In order to identify attributes which contribute to the perception of the publicness of public spaces, a comprehensive literature survey was conducted. From the many attributes that were found, the attributes related to the context of Colombo were identified. Following the identification of the attributes and the range of levels of each attribute, a number of pilot surveys were conducted to identify the 10 most relevant attributes to the study area. Thereafter, two research questionnaires were prepared.

The first research questionnaire was developed to identify the desirable levels or dimensions of each attribute. The second questionnaire was based on the first research questionnaire. The most desirable level of each attribute reported by the respondents of the first survey was presented to be evaluated. Here the respondents were asked to identify the significance level (weight) of each attribute's most desirable level.

The survey sample was selected in such a way that a cross section of users representing the different age groups, gender, degree of physical well being and social prospects were represented. Over 150 samples were collected covering potential users over the age of six. Children under six years were not considered as they may not have sufficient exposure and experience to evaluate their priorities.

Self-explicated conjoint analysis method was used for the analysis of responses. Once the priorities and preference levels were established - a model that could identify the level of preference was developed. Finally, the developed model was used to evaluate four existing public spaces; namely Diyawana Park (Water's edge stretch), Viharamaha Devi Park, Galle Face Green and The Independence Square.

Analysis of the Public Survey

All responses were tabulated and data were screened to remove any incomplete responses. Descriptive statistics of responses were prepared to understand the distribution of the responses. Subsequently, the preferences of the attribute levels/dimensions of each response were weighted by the attribute importance given by the respondents to gain the utility values for each attribute level. These levels have been identified as the "self-explicated utility values". Once the utility values for each respondent were calculated, the weighted data for all respondents were summed up and averaged to obtain the relative weight of each attribute level.

Table 5: Example of how to obtain the weighted utility values of a given dimension

Permeability to a Public Space	**Individual attribute levels (utility values)**	**Individual attribute importance**	**Weighted utility values**
Highly visible & No boundaries	8	2%	= 8×2% = 0.16
Highly visible , with a boundary	10		= 10×2% = 0.20
Not visible , With a boundary	0		= 0×2% = 0.00

For further analysis, the collected responses were arranged and analysed using the SPSS (Statistical Package for Social Sciences)

Demographic Data

Table 2 shows the gender distribution of the respondents considered for the analysis.

Table 6 : Gender distribution

GENDER	FEMALE	MALE
Number of samples	80	79
Sample percentage	50.3%	49.7%
Actual distribution (according to 2011 census)	50.8%	49.2%

Above table shows that the sample closely represents the actual gender distribution of the areas considered.

Table 7 : Age distribution

GENDER	10 - 14 YEARS	15 – 29 YEARS	30 – 59 YEARS	60 AND ABOVE
Number of samples	10	54	69	26
Sample percentage	6.3%	34.0%	43.4%	16.4%
Actual distribution (according to 2011 census)	7.9%	34.3%	46.3%	11.5%

Table 3 gives the respondent's age distribution and it shows that the selected sample reasonably represents the actual age distribution of the areas. Slight deviations which can be overlooked can be observed in the categories of ages between 10 and 14 years and above 60 years. Respondents covering all Divisional Secretariat Divisions within the area of influence were selected based on the population levels to achieve a reasonable geographic distribution of the sample considered.

Analysis of the Weighted Attributes

Initially, the preference levels given for the ten attributes considered in the study were analyzed based on the total age and gender distributions. Table 4 shows the summary of the preference levels of the ten attributes and the corresponding rankings are given in Table 5.

Table 4: Preference levels for the ten attributes

	Mode of Access to The Public Space	Vicinity of the Public Space	Level of Shade or Shelter In A Public Space	Availability of Access Roads to A Public Space	Layout of the Public Space	Permeability of The Public Space	Seating Arrangement of The Public	Seating Environment	Activity Preference	Environment of The Public Space
All	**10.9%**	**11.2%**	**10.5%**	**7.6%**	**8.6%**	**7.6%**	**8.2%**	**9.2%**	**10.8%**	**15.5%**
Male	11.0%	11.7%	9.9%	7.4%	9.0%	7.6%	7.2%	8.7%	11.5%	16.0%
Female	10.8%	10.6%	11.0%	7.7%	8.3%	7.6%	9.1%	9.7%	10.1%	15.0%
10 - 14 Years	7.1%	11.8%	10.1%	8.2%	7.4%	7.1%	9.8%	9.0%	14.2%	15.3%
15 – 29 Years	10.5%	11.9%	10.9%	6.6%	8.8%	6.9%	8.3%	9.6%	10.9%	15.6%
30 – 59 Years	11.9%	10.9%	10.4%	8.1%	8.8%	8.1%	8.0%	9.1%	9.7%	15.2%
60 And Above	10.6%	10.2%	9.9%	7.8%	8.2%	8.2%	7.9%	9.1%	12.2%	16.0%

Table 5 : Ranking of the ten attributes

	Mode of Access to The Public Space	Vicinity of the Public Space	Level of Shade or Shelter in a Public Space	Availability of Access Roads to A Public Space	Layout of the Public Space	Permeability of The Public Space	Seating Arrangement of the Public Space	Seating Environment	Activity Preference	Environment of The Public Space
All	**3**	**2**	**5**	**10**	**7**	**9**	**8**	**6**	**4**	**1**
Male	4	2	5	9	6	8	10	7	3	1
Female	3	4	2	9	8	10	7	6	5	1
10 - 14 years	9	3	4	7	8	10	5	6	2	1
15 – 29 years	5	2	4	10	7	9	8	6	3	1
30 – 59 years	2	3	4	8	7	9	10	6	5	1
60 and above	3	4	5	10	7	8	9	6	2	1

Table 4 shows the overall weightages given for each of the attributes by the respondents. Analysis was further carried out to identify the preferences based on the gender and age categories. It can be seen that attribute, “Environment of the public space” has been ranked as number 1 irrespective of age or gender. Among all, the next four most preferred attributes can be identified as “vicinity of the public space”, “mode of access”, “activities available to be done in a public space” and “level of shade available in a public space” respectively. It can also be seen that the weightages of these five attributes are over 10% (above the average).

However, the ranking varies depending on the age or gender category. For example, it can be seen that the women in general prefer “shade” and consider it as the second most significant attribute, whereas for men, the second most preferred attribute is the “vicinity”. However, interestingly, both categories of young children and elderly have selected “activity” as the second most important attribute. Respondents between the age of 30 and 59 were found to have rated the “mode of access” to be their second most important attribute and this may be due to their responsibility of providing transport for the children and elderly to public spaces. It is also noted that there is no significant difference of the first five attributes between any age or gender category. Next five attributes namely **“**availability of access roads to a public space”, “layout of the public space”, “permeability of the public space”, “seating arrangement of the public space” and “seating considerations”, have received weightages less than 10% where “permeability of the public space” and “availability of access roads” were rated as the least important among the attributes presented.

As per the self-explicated conjoint analysis method, weightages of the presented levels/dimensions of each of the attribute were derived by multiplying the scores given in a scale of 0 to 10 (0 leased preferred and 10 most preferred) by the mean weightages identified for each attribute. Weighted utility values for each of the attributes are presented in the following

section. Further, in order to identify the relative importance, the weighted utility values for all the attributes and dimensions were listed together and tabulated.

It is observed that the utility values for all the attributes has a median value closer to 0.5 and lower and upper quartile values of 0.4 and 0.7 respectively. Accordingly, limits for outliers are 0.1 and 1.0. Considering the above distribution of utility values, the following criteria were used to categorize the levels/ dimensions of each attribute.

Table 6: Categorization of the relative importance

Received weighted utility values (γ)	Relative Importance
$\gamma \geq 1.0$	Very high
$0.7 \leq \gamma < 1.0$	High
$0.4 \leq \gamma < 0.7$	Moderate
$0.1 \leq \gamma < 0.4$	Low
$\gamma < 0.1$	Very low

Weighted Utility Values

Mode of accessibility to the public space

According to figure 1, it can be seen that majority prefer access to the public space by "all modes". This has a utility value of 0.838 that falls into the category of high importance. Further, a moderate importance can be seen for access by "private vehicles only". Respondents have given low importance for access by "public vehicles only" and for access "only by foot". Accordingly, it can be suggested that when designing a new public space priority must be given to private vehicles and reasonable access should also be provided for the public vehicles and pedestrians.

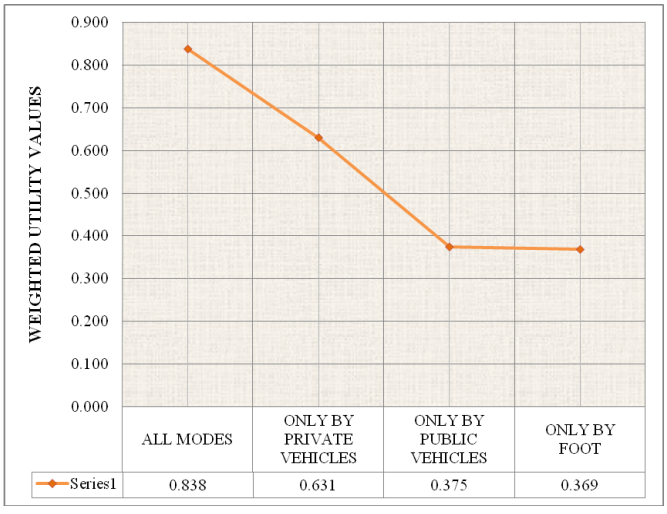

Figure 2: Mode of accessibility

Vicinity of the public space

Figure 2 shows that the most preferred vicinity of a public space is a “natural setting” such as a waterfront or an open space. This has been considered to be one of the very high important dimensions of a public space by the respondents. On the other hand, a public space in the middle of an “institutional setting” has been shown to be the least preferred among the respondents. This was due to fact that most respondents thought that such vicinity would bring in too many vehicles to the public space. Though “hotel”, “mixed” and “residential” vicinities were preferred by certain gender and age categories, it can be clearly recognized that there is a significant gap between these and the most preferred situation.

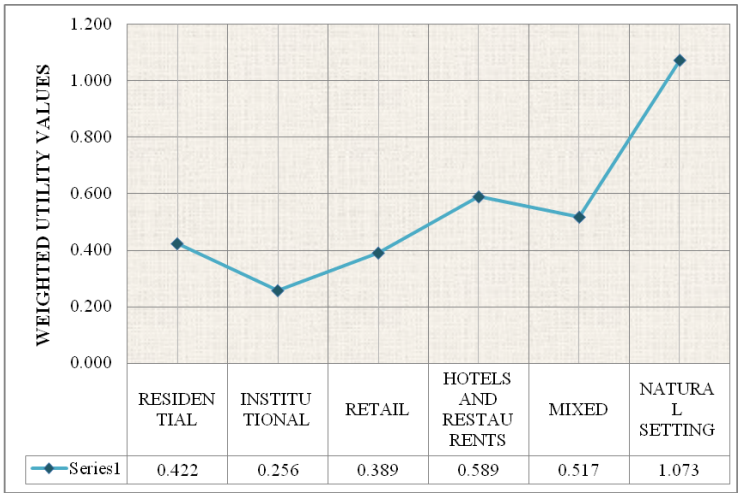

Figure 3 : Vicinity of the public space

Level of shade and shelter at the public space

Figure 3 demonstrates that the least preference of the majority is for a public space without any shelter or shade. Though as per the selected categorization scattered shade and fully shaded environments have been rated as high important dimensions, interestingly, scattered shelter or fully sheltered environments have been rated as moderately important dimensions. This may have been because shelter was considered by many to be obstructing the natural setting and creating an unsecure environment in public spaces. The results indicate that public spaces provided with shade and few shelters will be preferred by majority of the users

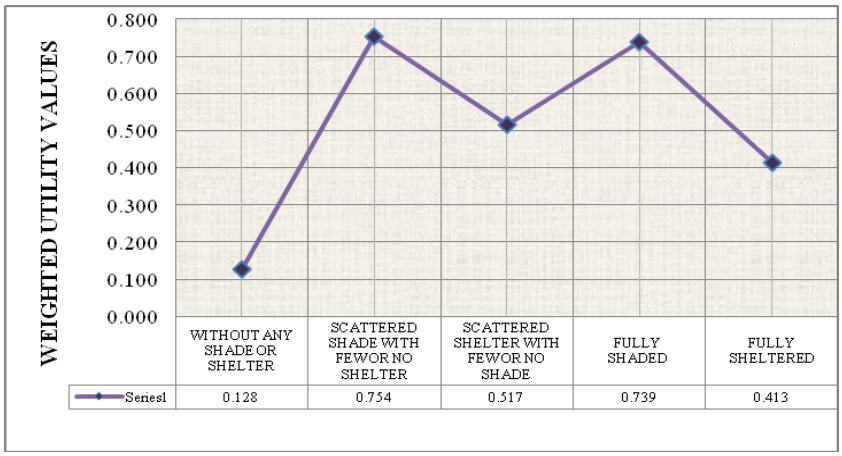

Figure 4 **:** Level of shade and shelter of the public space

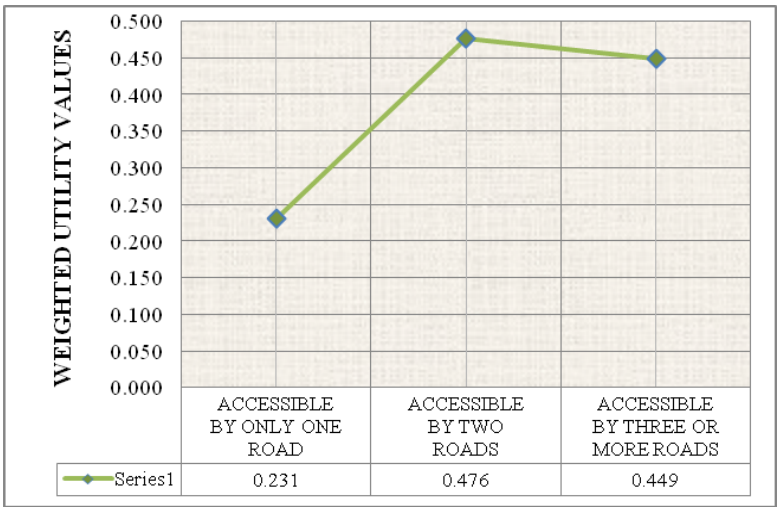

Figure 5 : Availability of access roads

Layout of the public space

As per figure 5, public prefer public spaces having large open spaces with sub spaces. This supports the argument made by Marcus & Francis (1998) and Pushkarev and Zupan (1975) that in order for different activities to take place concurrently, it is necessary to provide a variety of spaces. Even though variety of spaces has been preferred by the public, it can also be noted that it is only a moderately important dimension for the publicness of the public spaces.

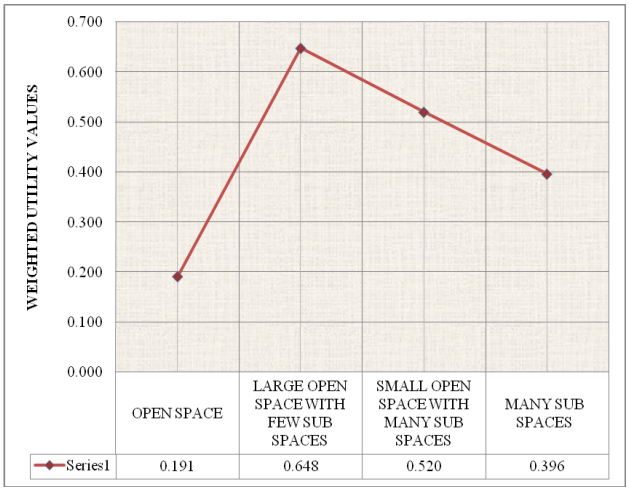

Figure 6 : Layout of the public space

Permeability of the public space

According to reviewed literature, public spaces which are visible from the streets but also have soft boundaries were identified to be preferred by the public. From the figure 6, it is revealed that the people in the study area also prefer public spaces which have a soft boundary and which do not compromise the visibility of the public space from the access roads. The preference for such a “soft boundary” by most was revealed to be due to the concern of various invasions of the public space. (e.g. vehicular invasions). Though, it is identified to be only moderately important, provision of a soft boundary can be recommended from the study.

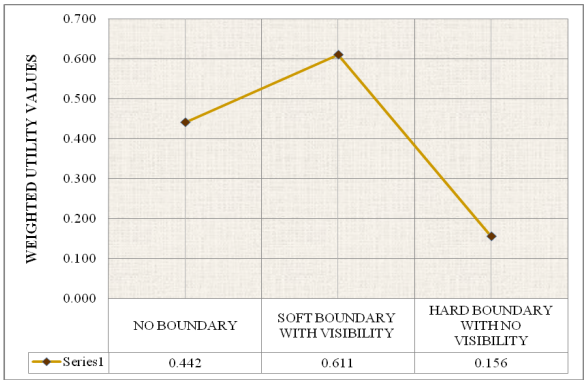

Figure 7 : Permeability of public space

Seating arrangement of the public space

Higher preference for seats in the middle/ islands of the public space can be identified with moderate importance for the perception of “publicness” of public spaces. Through the figure 7, considerable liking for seating in secluded spaces and at the edge of the public space looking in to the public space can also be seen. Marcus & Francis (1998) had suggested the provision of seating in various places as different subgroups prefer seating in different places for a variety of reasons.

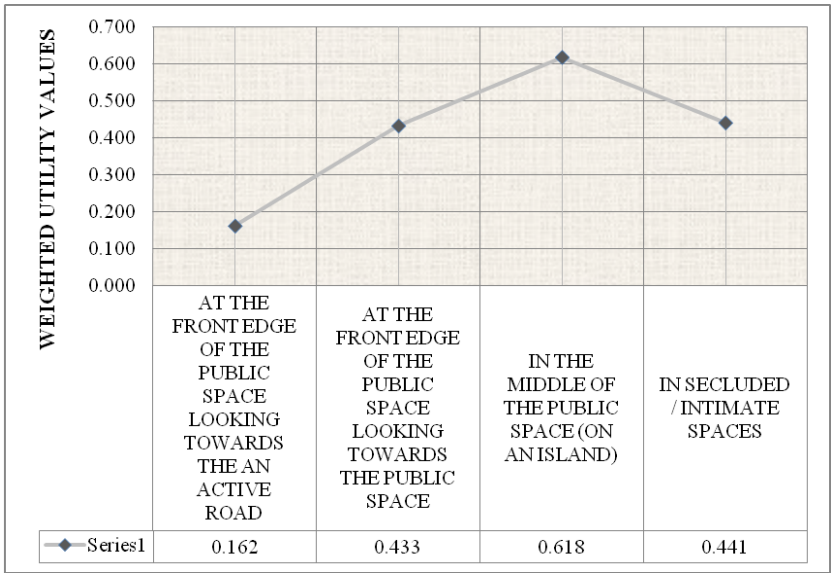

Figure 8 : Seating arrangement of the public space

Seating environment of the public space

With reference to Figure 8, it can be seen that the people in the study area mainly look for the availability of “shade” and “views” in locations of seating. Irrespective of the age, gender, or the occupation, most were found to consider shade in the public space, followed by a pleasing view to be of high important components of a public space.

Though not that significant, it can be recognised that “privacy” and “type of seating” are also contributing considerations of the public. (Mostly by the elderly and the women in the age between 30–59 due to their restricted physical abilities). Hence, providing seating in shaded areas with a pleasurable view is unquestionable. Further, it is advisable to provide comfortable seating to some extent, in a public space.

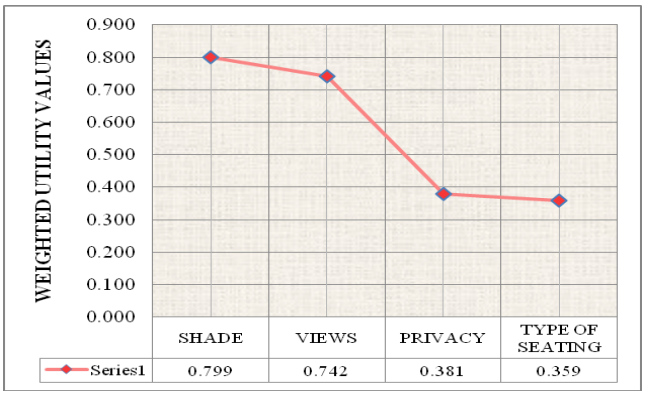

Figure 9 : Seating considerations

Activities in the public space

Preferences about activities were included in the questionnaire to identify the required facilities that must be provided in public spaces.

According to the analysis (Figure 9), it can be seen that the majority preferred to “relax” in a public space as it has been valued as a high important dimension of a public space. It can also be identified that the ability to “walk and exercise” and to “socialize’ too have being valued as moderately important dimensions. However, a fair preference to “watch” (concerts, other people, etc) eat, run and play can also be seen. Though, at present, the least preference is to ride bicycles, it is also at a reasonable level as compared to the levels or dimensions of the other attributes considered (falls into the moderately important category). Thus, it can be recommended that more consideration should be given to provide facilities such as seating, walking paths and spaces for exercising. Where possible, facilities for playing, eating and riding should also be provided.

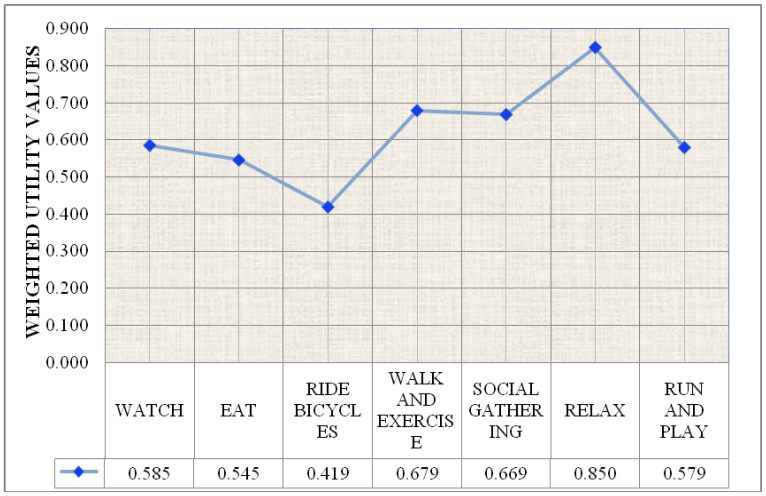

Figure 10: Activities

Environment of the public space

This attribute has received the highest attention by the respondents. Among all dimensions considered “cleanliness” (a management attribute) has received the highest weightage followed by “calmness”, “security” and “comfort”. However “social interaction” and “entertainment” have received somewhat lower preference (moderately important) among the others. Figure 10 shows that users consider environment related attributes to be relatively more important than majority of the physical attributes.

It can be concluded that in any circumstance, maintenance has to be given highest priority along with providing security, comfort and tranquillity.

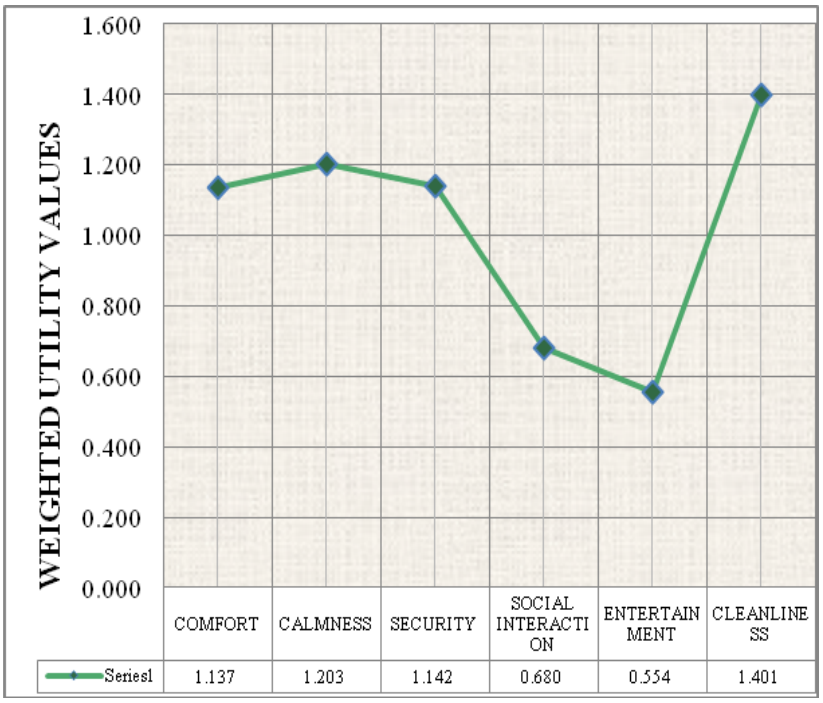

Figure 11 : Environment of the public space

Preparation of the Evaluation Criteria

The subsequently prepared evaluation criteria comprises of two components, which are;

1) Attributes evaluated in the study along with weighted data
2) Mandatory parameters that are either required by law (e.g. facilities for disable) or globally accepted and not considered for the survey.

For the first component there will be two situations; attributes where only one dimension/level can exist at a time and attributes where all dimensions/levels can co- exist. For both situations, the availability of dimensions/levels that have been considered under each attribute is first evaluated using a score on a scale of 1 to 100.

For the first situation of attributes, the level of acceptance was the weightage received for the available dimension divided by the weightage received for the most preferred dimension. For the second situation of attributes, the weighted average of the scores (summation of the scores which are multiplied by the respective weightages received from the user survey and divided by the maximum score possible) was be considered as the level of acceptance.

For the second component, a score as a percentage with respect to the accepted standard is considered as the representative level of acceptance.

Evaluation Survey

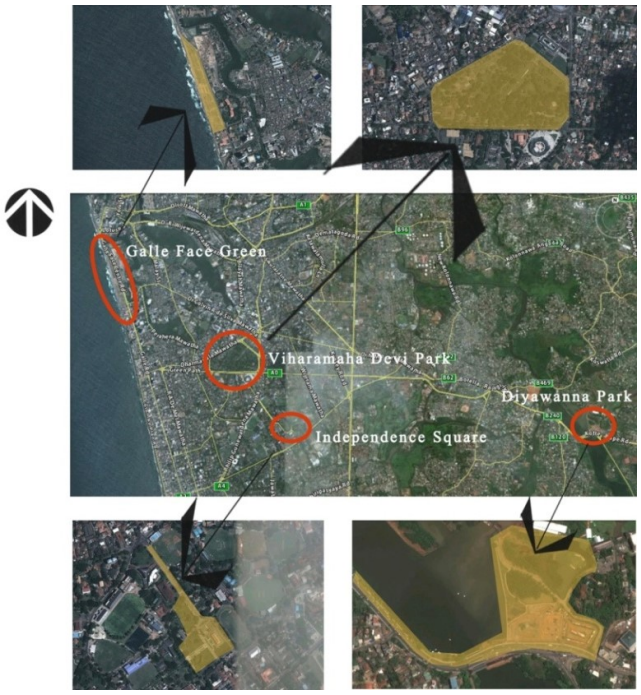

Figure 12 **:** Locations of the Selected Public Parks in Colombo

Evaluations were done by two individuals who are familiar with the methodology (Evaluator A – 24 year female, and Evaluator B – 54 year male) independently and results were compared for consistency. If more trained evaluators were used, the accuracy of these results could have been improved.

Galle Face Green

Figure 12 shows the Radar diagram of Galle Face Green evaluation. As per the diagram, it can be seen that the mode of accessibility, permeability and the availability of access road have received the highest scores by both evaluators as Galle Face Green can be accessed by any mode using the two adjoining access roads and also due to the soft boundary which does not hamper the visibility of the public space. The vicinity of the Galle Face Green too has received high scores as a considerable area of the public space is surrounded by the sea. All these attributes belong to the broad area of “location”, which indicates that this is situated at a suitable location. However, the level of shade and shelter, seating arrangement, layout and seating considerations have got considerably low score while the environment and the provision for activities of the Galle Face green have got an average score by both evaluators. It

can be seen that the attribute "environment" has received only an average score because of the low score received for cleanliness.

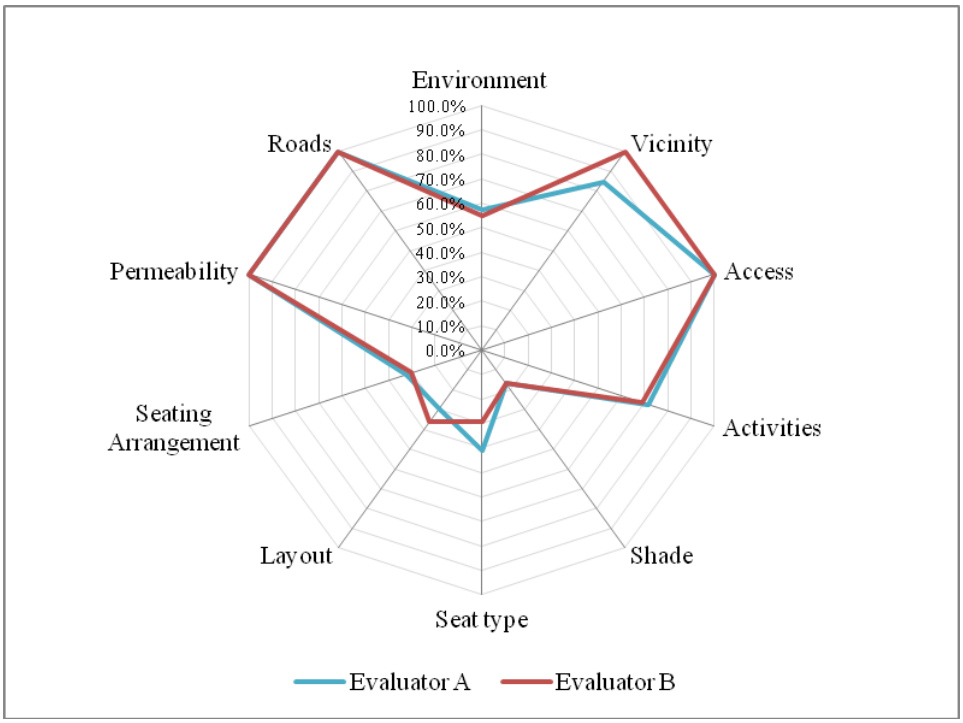

Figure 13 : Radar diagram of Galle Face Green evaluation

Hence, in order to enhance the publicness of the Galle Face Green, it is recommended, first, to improve the cleanliness, then by providing more provision for cycling and if possible relaxing which comes under the attribute "provision for activities". Thirdly, increasing the level of shade without sacrificing the uniqueness of the Galle Face Green would help in improving the publicness. Other possible improvements include increasing the number of seats and seating facilities.

Viharamaha Devi Park

The Radar diagram shown in Figure 13 demonstrates the scores received for the Viharamaha Devi Park by the two evaluators. According to the diagram only the attribute of "mode of accessibility" has received the highest score by both the evaluators. "Level of shade and shelter", "layout of the public space" and "availability of access roads" have got considerably high scores while attributes of "seating arrangement" and "seating facilities" have received average scores. Yet, "environment", "vicinity" and "permeability" of the public space have received significantly low scores. The "environment" attribute of Viharamaha Devi Park has got considerably low score and extremely low scores for the attribute "Vicinity" and for all the dimensions of the attribute "Environment" other than for "social gathering" and "entertainment". The fence going around the Viharamaha Devi Park acting as a hard barrier has contributed to the low scores received for the attribute "permeability". Similarly the proximity to only institutional and commercial areas has contributed to the low scores for the attribute "vicinity".

However, after the surveys were carried out, it is observed that the Viharamaha Devi Park is in the process of getting a significant face lift. Under this improvement, some sections of the boundary has already been removed and improved paths for pedestrians and cyclists are to be constructed. With the redevelopment, Viharamaha Devi Park has a high potential to become a very attractive public space by improving the dimensions related to the attribute "environment". Further improvement by provision of a variety of comfortable seats at appropriate location could also help in improving the publicness.

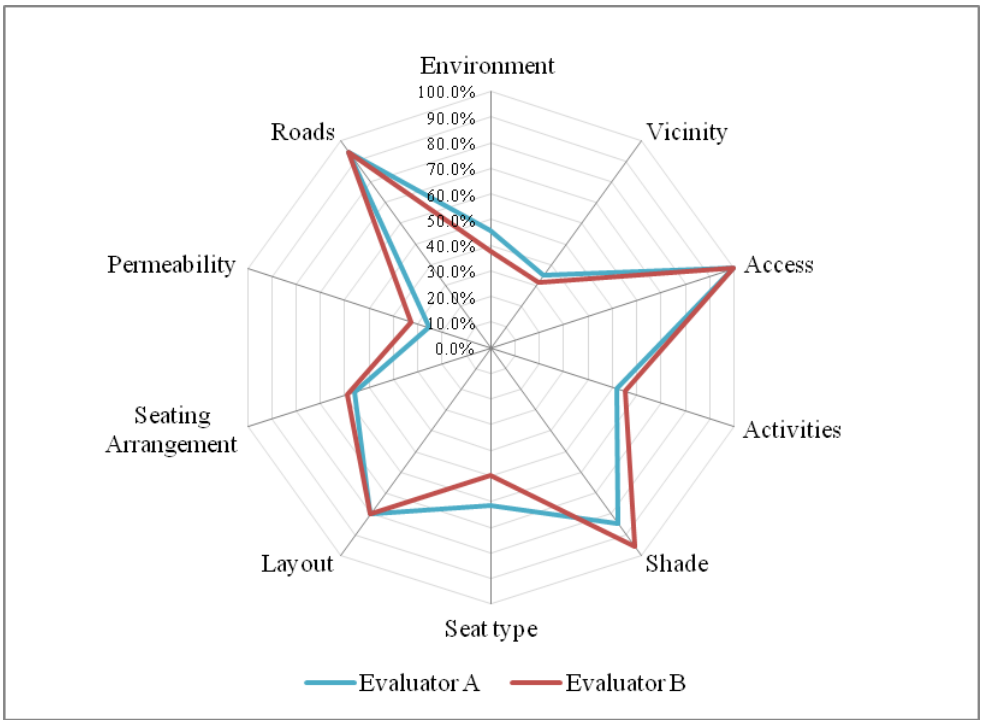

Figure 14 **:** Radar diagram for Viharamaha Devi Park Evaluation

Independence Square vicinity

As indicated in Figure 14 the "availability of access roads" and the "level of shade" in the Independence Square public park have received significantly high scores by both the evaluators, while the attributes "environment", "mode of accessibility", "provision for activities", "layout" and "permeability" too have received above average scores. The attribute "environment" is low due to lack of "entertainment" for a cross section of people. Lack of facilities for public transport, lack of eating places and limited open spaces to run and play have contributed in reducing the scores of the attributes "mode of accessibility", "provision for activities" and "layout". Since there is almost no boundary the scores for the attribute "permeability" have been reduced.

Further, attributes "vicinity", "seating facilities" and "seating arrangement" have got significantly lower scores. The predominantly institutional vicinity, lack of available seating and lack of variety of seating facilities respectively are the causes for the low scores received for the above mentioned attributes.

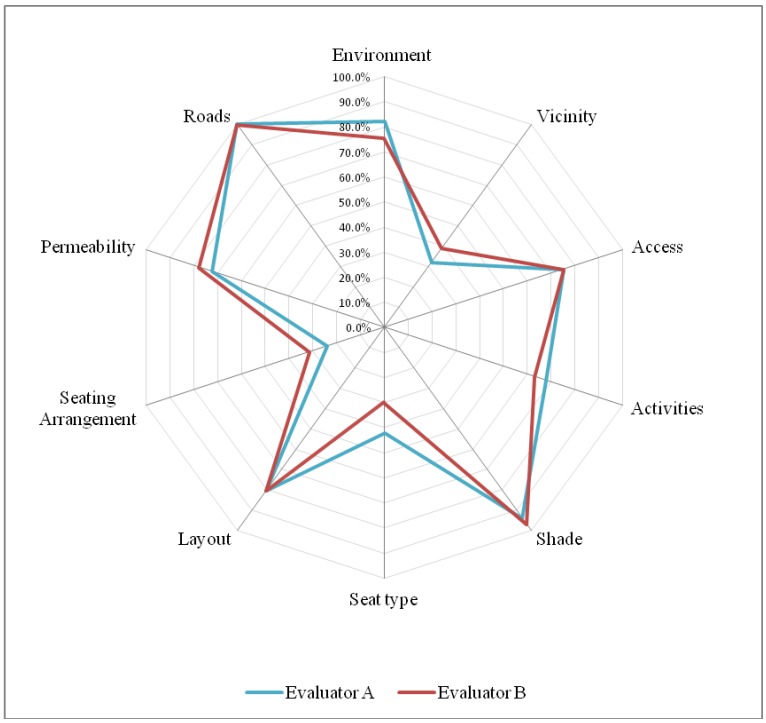

Figure 15 : Radar diagram for Independence Square Evaluation

Therefore, in order to improve this public space, significant management and design attention must be paid to provide "entertainment" for a cross section of people. Because of the current one way operation, it is not convenient to improve public transport facilities to the Independence Square. Hence the next consideration must be made on providing food and beverage outlets in the public space. Consecutively provision for seating facilities such as shade, views, and comfortable seating arrangements must be made. For further improvement, if possible the layout of the public space could be altered in such a way providing open space to run and play. Subsequently provision for more seating and a soft barrier can be recommended.

Diyawanna Park (Water's edge stretch)

The attributes "mode of accessibility", "layout" and "permeability" have received the highest scores by both evaluators while "environment", "vicinity" and "level of shade" too have received significantly high scores. Interestingly, in this public space other than the "availability of access roads" all other attributes ("provision for activities", "seating facilities" and "seating arrangement") too have received above average scores. Though "availability of access roads" is the least significant attribute contributing to the "publicness" of the public space not having direct access to the site from the main access road and inability to park along the main access road have contributed for the lower score.

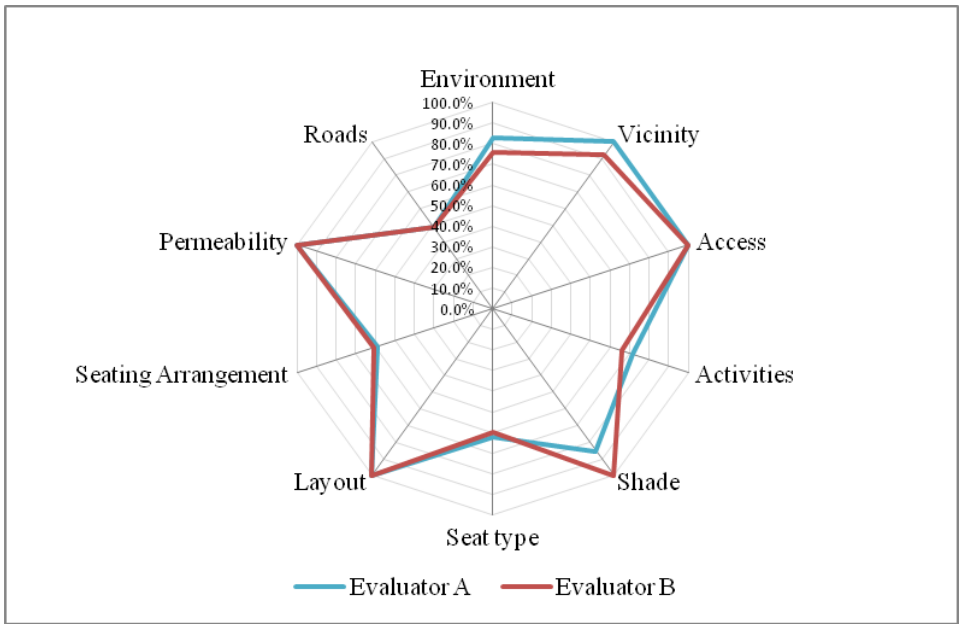

Figure 16 **:** Radar diagram for Diyawanna Park (Water's edge stretch) Evaluation

In order to enhance the publicness of Diyawanna Park, provision for area for run and play and few more eating spaces and could be provided similar to the Independence Square location. Seating facilities along with the number of seating could also be increased. The road that goes along the east side of the public space (Polduwa road) could be widened to accommodate more traffic and road side parking after office hours and on holidays because of the traffic congestion experienced due to limited access and parking.

Comparison between the evaluated places

A comparison of all public parks considered is presented in (Figure 16) & (Table 8)

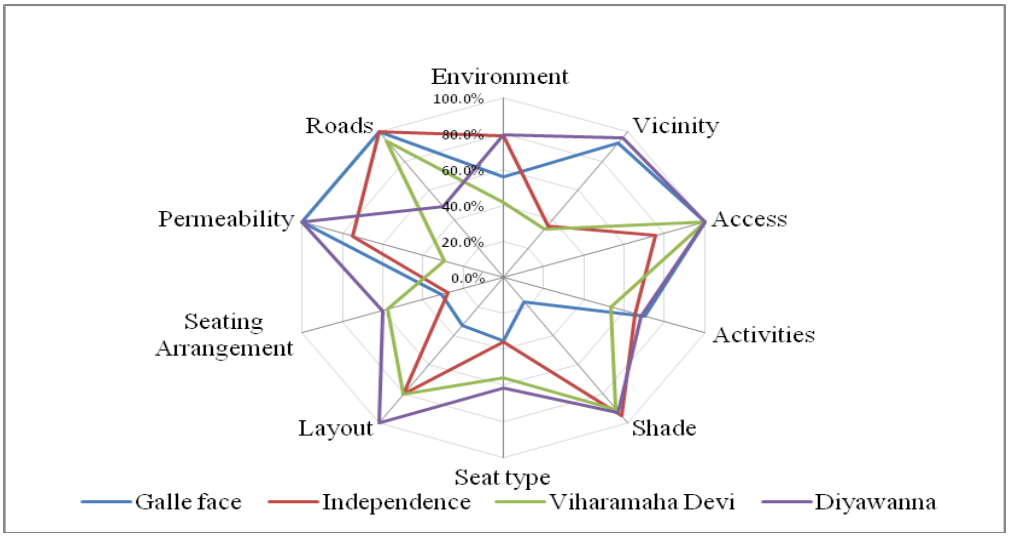

Figure 17 : Radar diagram for all considered public spaces

Table 7 : Over all comparison

	Environment of the public space	Vicinity of the public space	Mode of access to the public space	Provision for activities	Level of shade or shelter	Seating Environment	Layout of the public space	Seating arrangement of the public space	Permeability of the public space	Availability of access roads	SCORES
Galle Face Green	56.2%	92.5%	100%	70.5%	17.0%	35.1%	33.0%	31.2%	100%	100%	**63.0 %**
Independence Square Vicinity	78.9%	35.7%	75.3%	65.4%	95.3%	35.8%	80.2%	27.7%	75.1%	100%	**67.2 %**
Viharamaha Devi Park	41.7%	33.2%	100%	53.5%	90.4%	55.6%	80.2%	57.5%	29.3%	94.3 %	**62.4 %**
Diyawanna Park	79.3%	96.2%	100%	68.7%	92.7%	61.2%	100%	60.0%	100%	48.5 %	**81.5 %**
RANKS											
Galle Face Green	3	2	1	1	4	4	4	3	1	1	**3**
Independence Square Vicinity	2	3	4	3	1	3	2	4	3	1	**2**
Viharamaha Devi Park	4	4	1	4	3	2	2	2	4	3	**4**
Diyawanna Park	1	1	1	2	2	1	1	1	1	4	**1**

The overall analysis carried out considering the relative weightages given for individual attributes shows that among the four considered public spaces, Diyawanna Park (Water's edge Stretch) is ranked number one with respect to the overall publicness and is significantly above the other three public spaces. The Independence square vicinity is ranked second followed by the Galle Face Green and the Viharamaha Devi Park respectively. It can be seen that the Galle Face Green and Viharamaha Devi Park have got similar overall scores not significantly different from each other. It is important to note that both evaluators have ranked the considered public spaces in a similar manner. However, with the recommendations for improvement it can be identified that the Viharamaha Devi Park has a higher potential to be a public space which is accessible to all.

Evaluation of mandatory parameters

As facilities for differently able people are a mandatory requirement, they were evaluated separately for the availability of such facilities. These requirements were derived through the "access audit checklist" defined under the urban design handbook and the document "promotion of accessibility to the built environment for persons with disabilities: by the ministry of social services.

The table 9 presents the average scores received for the mandatory parameters. It can be seen that the Independence square vicinity has received relatively higher scores than the other public spaces. Whereas Galle Face Green and Viharamaha Devi Park have received significantly lower scores.

It is interesting to note that though these parameters are mandatory by law, significantly low consideration has been given to these parameters. Parameters such as "tactile paving" and "hand railing" were hardly found in any of the public spaces. Hence, it is recommended to satisfy these requirements in order to provide a space that could be accessible to all.

Table 8 : Evaluation of the mandatory parameters

Identified mandatory disabled facilities		Galle Face Green	Independence square vicinity	Viharamaha Devi Park	Diyawanna Park (Water's edge stretch)
Sidewalks and pathways	Width for wheelchairs – 1200 mm	92.5	95	57.5	90
	Dropped curb	15	92.5	60	47.5
	Tactile paving	0	0	0	0
Steps	Availability of handrail	0	-	-	0
	Demarcation of the edge of the step	0	-	-	82.5
Ramps	Availability of ramps	0	-	85	0
	Slop less than 1:12	0	-	92.5	-

Conclusion

The ten most relevant attributes to the study area were identified based on a number of pilot surveys. Two research questionnaires were prepared to identify the desirable levels or dimensions of each attribute and to identify the significance level (weight) of each attribute's most desirable level. Self-explicated conjoint analysis method was used for the analysis of responses.

It was found that attributes such as "environment of the public space", "vicinity of the public space", "mode of access to the public space", "provision for activities" and "level of shade or shelter" were considered to be highly important attributes in this respect in the descending order.

Further, "seating facilities", "layout of the public space" and "seating arrangement of the public space" were also found to be important attributes contributing to the publicness below the above five. However it was also revealed that attributes "permeability of the public space" and "availability of access roads" were not that significant when considering the publicness of public spaces.

As per the results of the evaluation, it was revealed that in terms of the location, Galle Face Green is the most accessible public park by the public where the accessibility, permeability, the availability of access road and the vicinity appeared to be excellent. However it was also identified that attributes such as provision of shelter/shade, arrangement of seating, seating environment, layout and the environment of the Galle Face Green is considerably inadequate hence hindering the publicness of the public park.

In the existing condition, only the attribute "mode of accessibility" is at an excellent level at the Viharamaha Devi Park. It was identified however that the "level of shade and shelter", "layout of the public space" and "availability of access roads" are at a considerably agreeable level too. Nevertheless, the publicness of Viharamaha Devi Park has significantly reduced due to its environment, vicinity and permeability.

At Independence Square Public Park, it was identified that “Availability of access roads” and “level of shade” are at an excellent level and “environment”, “mode of accessibility”, “provision for activities”, “layout” and “permeability” too are at a favourable level. However lack of facilities for public transport, lack of food outlets and limited open spaces to run and play are areas that need be considerably improved.

When considering the Diyawanna Park, it was recognised that all the considered attributes are at a considerably satisfactory level and needs improvement in only the seating environment and the access roads.

Through the results of the evaluation, it was identified that with respect to the publicness, Diyawana Park, was the highest rated public park among those that were considered. Independence Square vicinity, Galle Face Green and Viharamaha Devi Park were rated second, third and fourth respectively. The difference between Galle Face Green and the Viharamaha Devi Park is marginal for both evaluators. Based on the possibilities for improvements, it was revealed that Viharamaha Devi Park has the highest potential for future improvement.

The second component of the evaluation comprised of facilities for disabled or differently able which is mandatory by law. It was interesting to find out that significantly low consideration has been given to provide facilities for differently able people.

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