

ENCOURAGING ATTRIBUTES IN URBAN RECREATIONAL WALKWAYS: USER PERSPECTIVES

Wickramaarachchi N C¹, Dilhan J L I and Perera M T U

¹Department of Estate Management and Valuation, University of Sri Jayewardenepura,
Sri Lanka
nishani@sjp.ac.lk

²State Mortgage and Investment Bank, Sri Lanka
Indrajith_dilhan@yahoo.com

³Department of Estate Management and Valuation, University of Sri Jayewardenepura,
Sri Lanka
thariperera44@gmail.com

ABSTRACT

Numerous health concerns such as obesity is increasingly prevalent among many urban dwellers followed by lack of physical exercise even walking. Limited space in urban settings to provide adequate open spaces, providing recreational facilities is a key issue experienced in urban areas in Sri Lanka. Thus, an ideal solution arises as 'walking paths,' where only a strip of land is required. Among the limited studies directly rely on the attributes in walking paths, there are studies on 'adults walking in open spaces' discussing some attributes should consider in developing the facility. However, no evidence to date on the attractive attributes or the adequacy of the attributes in the walking paths. Accordingly, the main aim of this study is to examine the public perception on attributes of walking avenues in urban areas of Sri Lanka. Data collected through a self-administered questionnaire on ten attributes from a convenience sample of 150 users selected from three separate settings. The descriptive statistics, univariate analysis, hoc multiple comparisons, and homogeneous subsets technique were used in the analysis. Results reveals, safety as the preferred attribute while shading and natural settings also significant. An income variation presents that the respondents with above the income level of LKR 65,000 preferred cafeterias providing herbal drinks while the users with below that income level are less interest with the attributes of changing rooms and street vendors. It is recommended to consider the preferred attributes in developing future walking paths to encourage the public to get the full benefits.

Keywords: Attractive Attributes, Public Perception, Urban Setting, Walkways, Sri Lanka.

1. INTRODUCTION

Inadequate physical exercise is a leading cause of chronic health issues where 'walking' is conveniently accessible, effective physical exercise (Sugiyama & Thompson, 2008) everyone can undergo with no cost. Hence, impact of built environment on human health is acquiring increasing attention promoting multidisciplinary research approaches in medicine and urban planning fields. Providing adequate and attractive recreational facilities is a major concern in urban planning. Recreation, in its wider sense, is identical with leisure for most people or else, recreation and leisure are synonymous terms for things which are done during free time (Koppen et al., 2014). The recreation was considered to restore mental energy/mental balance by discharging (surplus) energy which can be physical and/or psychological (Jazilatur, 2008). Present day recreation still functions as a tool to restore and conserve men and women's energy for further work, duties, and obligations (Brademas, 2018). Even though, the physical activities are being phased out of daily life, transportation, and the workplace while some people walk and exercise in their spare time to make up for their inactive lifestyles.

Accordingly, residents have access to local physical activity possibilities, notably recreational walking, through public open spaces (POSs). In modern built environment, studies are confirmed significant positive associations of POS access with recreational walking (Bjerke et al., 2006; Manta et al., 2018; Adiba & Roshida, 2019). Walking is considered as an important exercise for adults to prevent certain chronic diseases (Sugiyama et al., 2010) hence, planning and design literature elaborated the importance of planning suitable spaces for walking in urban environment (Giles-Corti et al., 2005) while demanding of overlong space. Current elevated demand and limited urban land resources; it is extremely difficult to locate land for larger public open space development with adequate provisions for recreational walking. Consequently, narrow strips of lands probably stream bank reserves were identified as prime areas for designing public open spaces where people can leisurely walk. Thus, the present style of public open space is a renowned idea in urban planning today, and it is often recognized in several themes, such as jogging track, walking avenue, walking track, and walking trail, (Ranasingha & Ashika, 2016) inter alia.

Encouraging people specially, the older people to engage in relaxed walking, requires some attributes along the walkaway (Sugiyama et al., 2010). In fact, there is very little information available directly relevant to walking avenue attributes in prevailing literature since the concept has been newly endorsed in urban planning. However, the literature developed on ‘adults walking’ identifying as an appropriate physical activity to reduce several health issues and maintaining mental balance, considers few attributes should be there in a walking avenue or in an open space where walking facility is provided. Hence, some attributes discussed in open spaces and walking avenues were considered in this study.

The studies heavily discussed on the concept, attractiveness and connected the concept with some other attributes that increase the attractiveness. Among them “easy access” is a major attribute in open spaces (Grahn & Stigsdotter, 2003; Koppen et al., 2014). According to Bedimo-Rung et al., (2005), while defining as “the ability of people to get to and navigate within a park” which has been measured using the criterion of park availability in the community, distance from the visitors’ place of residence, and ability to navigate within the park. Subsequently, the “Aesthetic appearance” of the natural environment was identified as another attribute of POS and measured as per the different dimensions of the natural setting, particularly on perception and preference of user experiences of nature view, landscape, and the environmental features and qualities (Brademas, 2018; Madureira et al., 2018). The “safety” is another important attribute that has significantly considered when developing public open spaces (Bjerke et al., 2006; Jim & Shan, 2013; Ode Sang et al., 2016). Finally, the studies were identified the importance of “available amenities” in public open spaces in different urban settings. The facilities of cafes, toilets, changing room, sign system, parking, availability of benches and shadings, etc. which significantly associates with visitors’ intention to select a public open space for a visit (Manta et al., 2018; Madureira et al., 2018).

Meanwhile, how people perceived on the attractiveness of a walking avenue for them to use and retain a considerable time has not evaluated from the user perspective. The term “perception” is often defined as “a cognitive meaning which having a set of detection and interpretation of sensory information” (Lemberg, 2010). In this sense, perception can be identified as subjective sympathetic feeling (Addis et al., 2011). Thus, the people's behavioral intentions and perceptions differ depending on their specific qualities (Farahani & Maller, 2018) and social, economic, and cultural aspects (Adiba & Roshida, 2019). Accordingly, the socio-economic and cultural factors mainly investigated on users’ age (Schetke et al., 2016;

Schipperijn et al., 2010), gender (Ode Sang et al., 2016; Schipperijn et al., 2010), education, income, and employment (Jim & Shan, 2013; Schipperijn et al., 2010), etc. It is important to understand the public perception to develop an effective and sustainable open space (Ratnayake et al., 2017) whereas in the legal and planning process in Sri Lanka it is recommended.

Prior research has discovered substantial connections between POS features and neighborhood preference. It does not, however, explicitly address recreational walking, including the novel paradigm of walking avenues and its characteristics through user preferences. To address these gaps and develop stronger evidence foundation to guide walking track construction, further research is needed to evaluate specific walking track elements in depth and analyze their links with contextually relevant social and economic factors of users. Therefore, the main aim of this study is to examine the public perception on attributes of walking avenue in urban areas of Sri Lanka.

2. METHODS

The study focused on three urban walking avenues viz., Parliament Walking Avenue as Case A, Oruthota Walking Avenue as Case B and Mahara Dalupitiya Walking Avenue as Case C that are recently developed in two key neighborhood districts of Colombo and Gampaha, Sri Lanka. Those three tracks have been developed by the side of a water body and the track length is nearly 2km. Primary data was collected through a self-administered questionnaire having face-to-face interviews. User preference were collected on ten attributes identified through literature survey and pilot field observation. The users of the walking ways during the morning and evening peak hours are the target population of the study. Convenience sampling approach selects 50 users from each location accounting 150 altogether. The descriptive statistics, univariate analysis, hoc multiple comparisons and homogenous subsets technique were used to analyze the data.

3. RESULTS AND DISCUSSION

The five socioeconomic parameters of gender, age, education level, employment type and income level were used to identify the characteristics of respondents. There were more males than females and majority were in the age group of 36-45. Many had the education qualification up to degree level and are the employees of private sector whilst the monthly income rests on more than LKR 65,000/- per month.

3.1 Evaluating Walking Avenue Attributes in Relation to Socioeconomic Characteristics of Users

The univariate analysis of variance was used to examine the effects of five social and economic characteristics of gender, age, education, employment type and income level on the ten attributes viz., the availability of cafeteria, street vendors, parking facility, benches, toilets, changing rooms, shading, landscape, natural view, and safety as presented in Table 1.

Results in Table 1 reveals that income level and gender have significantly influenced (>0.05) on cafeteria and safety, respectively. In this scenario, it is critical to examine any association between various income levels. For this purpose, the Hoc Multiple Comparisons technique was used to analyse the observed mean of the variables. Accordingly, the income was categorised in to eight levels in relation to the attribute of cafeteria. Results reflected that mean value of all income groups were not different.

Table 1: Univariate Analysis of Variance between Social-economic Characteristics and the Attributes (significant values)

Dependent variables *	C	SV	P	B	T	CR	Sh	LE	NV	Sa
Intercept	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Gender	.112	.206	.500	.500	.066	.063	.530	.329	.312	.042
Age	.415	.814	.183	.183	.382	.537	.116	.274	.996	.523
Education	.967	.783	.239	.239	.248	.652	.220	.339	.900	.721
Employment	.141	.704	.481	.481	.671	.052	.143	.419	.317	.140
Income	.010	.380	.135	.135	.083	.055	.775	.975	.649	.294
R Squared	.822	.751	.796	.796	0.817	0.822	.825	.771	.728	.746

*Note: (Cafeteria= C, Street Vendors=SV, Parking facility=P, Availability of Benches= B, Toilets = T, Changing Rooms= CR, Shading=Sh, Landscape= LE, Natural View= NV, and Safety=Sa.)

Source: Survey Data 2020

- 15 000 – 25 000 income level differ from 65 000 – 75 000 income level
- 25 001 – 35 000 income level differ from 65 000 – 75 000 income level
- 35 001 – 45 000 income level differ from 65 000 – 75 000 income level
- 35 001 – 45 000 income level differ from 75 001 – 85 000 income level
- 35 001 – 45 000 income level differ from > 100 000 income level
- 45 001 – 55 000 income level differ from 65 000 – 75 000 income level
- 45 001 – 55 000 income level differ from 75 001 – 85 000 income level
- 45 001 – 55 000 income level differ from > 100 000 income level

For comparing dimensions, it was explored for further groups such as the group of ‘cafeteria facilities for person who’s income level below LKR 65 000’ and ‘cafeteria facilities for person who’s income level above LKR 65 001.’ Similarly, the attribute safety as ‘safety of males’ and ‘safety of females.’ Accordingly, all preceding insignificant variables were used to further analysis of compare dimension. Table 2 represents each group of variables for compare dimension.

Table 2: Comparative Dimension of each Variable

Group No	Dimensions
Group 1	Facility of Toilet
Group 2	Facility of Changing Room
Group 3: 1	Cafeteria facilities for person who’s income level bellow Rs. 65 000
Group 3.2	Cafeteria facilities for person who’s income level above Rs. 65 001
Group 4	Availability of Street vendor
Group 5	Facility of Car parking
Group 6	Availability of Bench
Group 7	Availability of Shading
Group 8	Availability of land Scene
Group 9	Availability of Natural View
Group 10.1	Safety of male

Group 10.2	Safety of Female
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Source: Survey Data 2020

Based on Hoc Multiple Comparisons results, the homogenous subsets technique was applied to identify each homogenous group of dimensions. Table 3 presents the results from lowest to highest (dimension 1 to 6).

Table 3: Homogeneous Subsets of the Study

Hochberg		Dimension					
Group	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
Group3.1	114	2.04					
Group4	150		2.62				
Group2	150		2.74				
Group5	150			3.91			
Group6	150			3.91			
Group3.2	36			4.03			
Group7	150			4.33	4.33		
Group8	150				4.59	4.59	
Group1	150				4.72	4.72	
Group9	150					4.85	
Group10.1	114						4.95
Group10.2	36						4.98
Sig.		1.000	1.000	.198	.365	.994	1.000

Means for groups in homogeneous subsets are displayed.

Source: Survey Data 2020

Accordingly, five homogenous groups can be identified, and the dimensions can be ranked as follows.

- 1st Rank Group 10.1 and Group 10.2
- 2nd Rank Group 1, Group 7, group 8 and Group 9
- 3rd Rank Group 3.2, Group 5 and Group 6
- 4th Rank Group 2 and Group 4
- 5th Rank Group 3.1

Consequently, safety (safety of male, safety of female) was the major concern of the respondents. In all three surveys, as safety was not a problem for users in terms of fear of other people, fear of harm, fear of unsecured animals, and anxiety about traffic flow. (Studies, conducted in Los Angeles (Gearin and Kahle, 2006) and Hong Kong (Lo and Jim, 2012) have discovered a significant preference for safety in parks. Attributes such as, availability of toilet, shading, landscape and natural view affected to attract public for walking areas at the next level. All three cases had considerable sanitation in terms of cleanliness toilet facilities, and the landscape, shade, and natural view as vital components. Thus, many of the respondents stated that natural environment variables had a direct impact on their desire to engage in physical exercise and continuous visits. Various natural environmental influences motivate individuals to jog, stroll, or engage in various forms of physical exercise. In line with prior research, the study found that high landscape visual quality and natural view have a significant

impact on users' enjoyment with urban parks (Chen et al., 2009). The attributes of Cafeteria facilities (income level above LKR 65,001), car parking and availability of benches are significant at third level to attract public for walking areas. Finally, facility of changing rooms and availability of street vendors are identified as fourth group of attributes that influence on user preferences, attracting to walking avenues. The cafeteria facilities for person whose income level below LKR 65, 000 are the lowest prioritized and less influenced factor to attract public for walking areas. Accordingly, people with income level below LKR 65,000 do not expect changing rooms and street food, while high-income groups (income level above LKR 65, 000) enjoy herbal drinks and fruit juices in cafeterias along walking avenues.

5. CONCLUSION

Findings specify that safety is most prominent and preferred attribute of walking avenues to attract people. Subsequently, well designed landscaping, natural view, shading, toilet, and parking facilities have significantly contributed to better perceptions of the walking avenues. However, people do not show a considerable preference to facilities of changing rooms and street foods, while high income groups favorably wish to promote the herbal drinks in cafeterias of walking avenues. The outcome of this study is immensely important to design and management of outdoor environment to prioritize interventions that are likely to maximize preference for different segments of the population. Analysis of participant's responses produced useful information about the relative importance of attributes. Accordingly, analysis procedure of this study may be applied to other environmental settings in which attribute priorities are required to be understood.

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