

Gendered Active Living Patterns of a Popular Urban Park

A Case of Museum Compound, Trivandrum

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ABSTRACT: This research conducts a gender-based analysis of active living patterns in the Museum compound, a popular public park in Trivandrum city. The Museum compound, unlike others in its neighborhood, is not only one of the greenest spaces in the city but also one of the safest, in terms of having abundant surveillance and security teams employed to ensure the safety of its users. Yet the study shows a gender-based variation in the occupation and use of this public space. This research explores these variations and attempts to identify the infrastructural and design aspects that cause them. A primary study was conducted using quantitative and qualitative methods like direct observation, semi-structured interviews, questionnaire surveys and mapping of users and public infrastructure within the park. These studies together highlight some of the underlying factors causing the gender patterns observed. The results indicate that there exists an intrinsic gender bias among the users of the park and highlights parameters that contribute to this. These parameters can be referred when designing public spaces that are not just safe but also inclusive, allowing everyone to exercise their right to the public realm.

KEYWORDS: Active Living, Gender-bias in a Public Space, Public Park Design, Safety of Women

1. INTRODUCTION

“A safe city is one in which women and girls can enjoy public spaces and public life without fear of being attacked, one that promotes equal opportunities for men and women in all spheres of social, economic, cultural and political life.”

(Safe Cities, UN Women, 2010)

This paper studies the active living patterns in the Museum compound, a popular urban park in Trivandrum City, and analyses the gender based differences observed there. The Museum compound is considered as one of the city's greenest and safest public parks (Sonu T.S, 2014), having abundant surveillance infrastructure and security teams to ensure the safety of its users. Yet men and women were observed to follow different activity patterns while using this space. This study delves into these contrasting patterns and analyses the user choices based on safety perceptions and park infrastructure. The results throw light on the users' preferences for active living and can help design inclusive spaces for physical activity and sport in the city.

2. ACTIVE LIVING AND URBAN OPEN SPACES

The World Health Organization defines active living as “a way of life in which physical, social, mental, emotional and spiritual activities are valued and are integrated into daily living” (WHO, 2018). The target is to perform 30 minutes at least of the activity every day. This can be attained through a variety of ways such as “walking or bicycling for commute, undertaking fitness exercises, participating in

sports, playing in a park, working in the garden, taking the stairs and using recreational facilities” (Edwards. Peggy, 2008). Insufficient physical activity is one of the major risk factors for non-communicable diseases (NCDs). Individuals who are not sufficiently active in their daily lives run a 20-30% higher risk of developing NCDs and shorten their life span by 3-4 years (WHO, 2018).

Changing urban environments and development laws have a profound impact on public health (Shivakumar, 2019). Urban open spaces perform a critical role in facilitating physical activity, social interaction and recreation (WHO, 2016). Access to these spaces can greatly improve the physical and psychological well-being of the people. Recent studies have linked 3.3% of global deaths to physical inactivity, poor walkability and lack of access to recreational areas (WHO, 2016).

The National Family Health Survey 2015-16 conducted among the residents of Trivandrum City by the Society for Promotion of Youth & Masses (SPYM), shows that women here exhibit a higher incidence of lifestyle diseases like hypertension, anemia, obesity or underweight issues and thyroid dysfunction in comparison to men (National family health survey, 2015-2016). This emphasizes the urgency to provide women safe access to active living opportunities in our city, making it important that we understand the performance of our public spaces from a gender perspective.

3. WOMEN IN THE PUBLIC REALM

Henri Lefebvre, in *Everyday Life in the Modern World*

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(1971), observes that “everyday life weighs heaviest on women” (quoted in Felski, 2000). According to him, women and men occupy different positions in everyday life and this shapes their understanding of the world (Felski, 2000). This difference in the way women and men occupy spaces in everyday life greatly impacts their active living patterns.

A significant portion of active living pursuits take place in public spaces, but Loukaitou-Sideris and Eck (2007) found that perceived safety issues create the most barriers to women occupying these spaces and becoming physically active. The perception of safety, rooted in one’s experiences and memories affect our relation to space and influence activity patterns (Loukaitou-Sideris & Eck, 2007). This has also been observed amongst women in Indian cities, who “orient themselves by considering the pros and cons of mediating through a space by assessing factors like people, accessibility and possible threats”(Phadke, Khan, & Ranade, 2011). Even when women are supposedly safe in public spaces, there is an intrinsic fear rooted in gender-related feelings of objectification and vulnerability which limit women’s participation in the public realm(Phadke, Khan, & Ranade, 2011). Thus, the city becomes gendered through the experiences, perceptions and actions of individuals.

A survey of public spaces in Trivandrum by SAKHI, a women’s resource centre, and UN Women, found that women felt unsafe in the public realm (SAKHI, UN Women, 2011). The survey found few women or groups of women occupying the public parks in the city unless accompanied by men. It observed that “if a group of women decided to break the norm, they will be stared at as if they are entering forbidden territory” (SAKHI, UN Women, 2011). These studies conclude that most public spaces are occupied by men and women find it difficult to exercise their right to the public realm.

4. SELECTING THE SITE - MUSEUM COMPOUND, TRIVANDRUM

A 2014 study analysing the popularity of Trivandrum’s various public spaces illustrates the popularity of the Museum compound for active living and recreation (Figure 1) due to its central location,

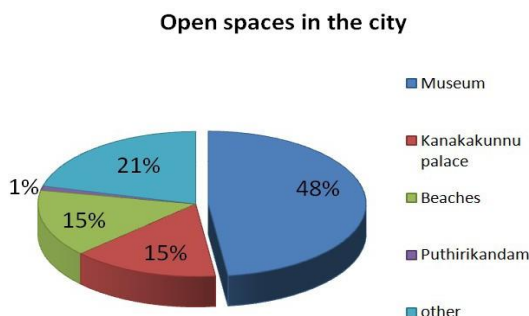
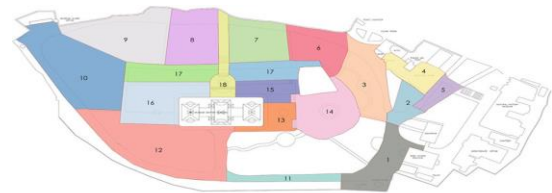
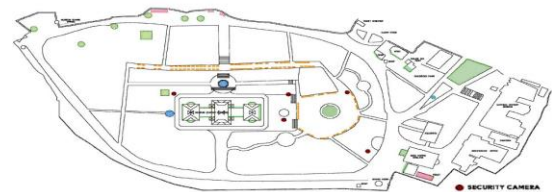


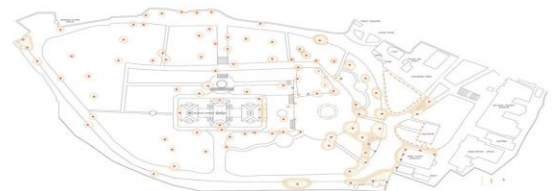
Figure 1: Popularity of various open spaces in Trivandrum. (Data sourced from: Sonu T.S, 2014)



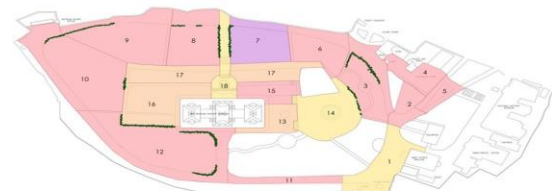
1) Map showing different zones in park



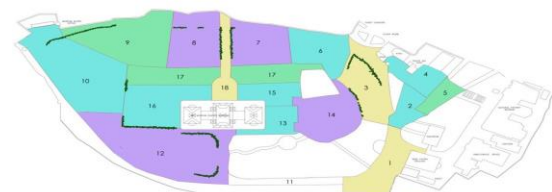
2) Map showing infrastructure in park



3) Map showing lighting in park



3) Map showing physical accessibility between zones in the park



3) Map showing visual connectivity between zones in the park

Figure 2 Layers of mapping and analysis of the study area looking at zoning, park infrastructure and access (Source: Author)

easy access and perceived safety(Sonu T.S, 2014). The Museum compound houses the Napier Museum, Trivandrum Zoo, botanical garden, a children’s park, Sree Chithra Art Gallery and the Natural History Museum. The compound attracts tourists as well as residents who come for recreation and other activities. The study area looks only at the open spaces freely accessible to the public and does not include the Trivandrum Zoo, Museums or offices.

5. METHODOLOGY

The methodology used in this study is adapted from the SOPARC (System for Observing Play and Recreation in Communities) sampling technique. SOPARC is a validated direct observation tool that uses momentary time sampling techniques to record systematic and periodic scans of individuals and contextual factors within pre-determined target areas in parks(Thomas & Cohen, 2006). The steps involved in the study methodology are:

1. An initial pilot survey of the Museum compound helped finalize the most active time periods for study as follows - Morning - 5:30 AM to 8:30 AM, Evening - 4:30PM to 6:30 PM, and After Dark - 6:30 PM to 8:30 PM
2. The park’s physical setting was mapped and divided into 18 zones (Figure 2.1). Infrastructure like lighting and surveillance systems, public amenities like drinking water, restrooms and seating were recorded (Figure 2.2, 2.3). Access and visual linkage between zones were observed to analyze the safety perception of each zone (Figure 2.4, 2.5).
3. User counts and activity patterns were collected by a direct observation study of park activities based on the SOPARC tool. 836 users were present in the morning, 1158 in the evening and 694 in the after-dark periods. The steps followed were:
 - a. The counts are taken zone-wise, during the three selected time periods.
 - b. Each zone is to be observed for an interval of 5 minutes.
 - c. In each zone, people counts based on gender, age, type of activity (sedentary, walking, and vigorous) and type of user groups (unaccompanied, with friends, with family) are electronically noted using a clicker app.
4. A structured questionnaire survey administered to 120 users and a semi-structured interview of 20

users helped gain a deeper qualitative understanding of their activity preferences and perceptions of safety and gender bias in the park.

6. ANALYSIS AND INFERENCES

Various ratios (Equations 1 to 5) were used to analyze the presence and activity levels of women (Table 1). A value greater than 0.6 showed a female dominated zone, values between 0.4 and 0.6 were considered gender neutral and those less than 0.4 were male dominated.

The Active Living Ratio (ALR, Equation 2) showed that during the time periods chosen most zones were predominantly active. In Table 1, all zones marked yellow showed an almost equal presence of men and women, while the ones marked in green had women as the primary user. The ratio of total women in a zone to the total zone population (WRTP, Equation 1) showed that most women preferred the evening and after dark time periods than morning. While in the morning, only 30% of users were women, the evening study saw 53% and the after dark study saw 45%.

WR_{AL}, WR_W and WR_V (Equation 3, 4, 5) allow a deeper insight of the women engaged in active living pursuits denoting, respectively, the portion of women active, walking or engaged in vigorous activities. Of the women observed in the morning, 95% were engaged in active living pursuits. The evening and after-dark studies observed 60% and 65% of the women users were active respectively. In comparison, the percentage of male users engaged in active living was lesser - morning (82%), evening (51%) and after-dark (54%). This means that women mainly use the museum grounds for a specific purpose and do not feel free to loiter, while more sedentary men were seen occupying the space. Also, walking is the preferred activity for women while more men engaged in vigorous activities like running or jogging.

$$WR_{TP} = \frac{\text{Total women present in a zone at a time}}{\text{Total population of the zone at that time}} \dots\dots\dots(1)$$

$$ALR = \frac{\text{Total persons engaged in active living in a zone at a time}}{\text{Total population of the zone at that time}} \dots\dots\dots(2)$$

$$WR_{AL} = \frac{\text{Total women engaged in active living in a zone at a time}}{\text{Total population engaged in active living in a zone at that time}} \dots\dots(3)$$

$$WR_W = \frac{\text{Total women walking in a zone at a time}}{\text{Total population engaged in active living in a zone at that time}} \dots\dots(4)$$

$$WR_V = \frac{\text{Total women running or exercising in a zone at a time}}{\text{Total population engaged in active living in a zone at that time}} \dots\dots(5)$$

The qualitative surveys allowed a gender-based look at users’ grouping patterns. Of the 120 respondents only 18% of women came unaccompanied to the park. Most (35%) came with friends and the rest with families (Figure 3). This pattern was also observed during the user counts. Interestingly, no

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women-only groups were observed during the study period. This corresponds to the SAKHI survey which also noted that few women occupy the public realms in Trivandrum city unless accompanied by men (SAKHI, UN Women, 2011). Responses to the interviews and surveys suggest that the unaccompanied female users prefer Museum for active living pursuits over Trivandrum’s other public spaces because of a perceived sense of security. Most respondents linked this perception to ease of access, visual accessibility, lighting and presence of other women and families.

Table 1. Results of the zone-wise analysis indicating the presence and activity patterns of women.

1) Morning, 2) Evening, 3) After-dark. (Source: Author)

TIME: 5:30 AM - 8:30 AM					
zones	WR _{TP}	ALR	WR _{AL}	WR _w	WR _v
Z1	0.3	1	0.3	0.32	0
Z2	0.32	1	0.32	0.32	0
Z3	0.62	1	0.62	0.61	1
Z4	0	1	0	0	0
Z5	0	0	0	0	0
Z6	0.33	0.87	0.33	0.33	0
Z7	0.35	1	0.35	0.35	0.33
Z8	0.31	0.97	0.31	0.32	0.22
Z9	0.31	0.93	0.3	0.32	0.1
Z10	0.33	1	0.33	0.33	0.36
Z11	0.39	1	0.39	0.41	0.2
Z12	0.27	0.81	0.33	0.5	0.12
Z13	0.18	0.81	0.23	0.28	0.16
Z14	0.45	0.18	1	1	0
Z15	0	0.66	0	0	0
Z16	0.11	0.55	0	0	0
Z17	0.14	0.35	0	0	0
Z18	0	0	0	0	0

TIME : 4:30 PM - 6:30 PM					
zones	WR _{TP}	ALR	WR _{AL}	WR _w	WR _v
Z1	0.47	0.75	0.42	0.41	1
Z2	0.54	1	0.54	0.54	0
Z3	0.56	0.51	0.52	0.54	0
Z4	0	0	0	0	0
Z5	0.68	0.31	1	1	0
Z6	0.57	0.62	0.56	0.54	0.7
Z7	0.43	0.6	0.34	0.4	0
Z8	0.55	0.52	0.5	0.54	0.33
Z9	0.49	0.49	0.46	0.46	0
Z10	0.39	0.79	0.5	0.41	1
Z11	0.34	0.93	0.29	0.33	0
Z12	0.46	0.3	1	1	0
Z13	0.65	0.37	0.84	0.84	0
Z14	0.55	0.12	0.59	0.75	0.26
Z15	0.66	0.43	1	1	0

Z16	0.35	0.05	0.66	0.66	0
Z17	0.44	0.57	1	1	0
Z18	1	0.21	1	1	0

TIME : 6:30 PM - 8:30 PM					
zones	WR _{TP}	ALR	WR _{AL}	WR _w	WR _v
Z1	0.51	0.84	0.54	0.54	0
Z2	0.34	1	0.34	0.34	0
Z3	0.62	0.72	0.47	0.51	0.43
Z4	0	0	0	0	0
Z5	1	0.71	1	1	0
Z6	0.48	0.62	0.34	0.36	0
Z7	0.36	0.82	0.39	0.4	0
Z8	0.3	0.63	0.33	0.33	0
Z9	0.42	0.78	0.5	0.5	0
Z10	0.33	0.38	0.57	0.57	0
Z11	0.28	1	0.28	0.28	0
Z12	0.6	0.2	1	1	0
Z13	0.31	0.75	0.41	0.5	0
Z14	0.54	0.16	0.62	0.63	0.6
Z15	0.4	0.13	1	1	0
Z16	0	0.3	0	0	0
Z17	0.27	0.01	0	0	0
Z18	0.58	0.08	0.5	0.5	0

LEGEND

WR_{TP}- Total population women ratio

ALR- Active living ratio

WR_{AL}- Active living women ratio

WR_w- Walking women ratio

WR_v- Exercising and running women ratio

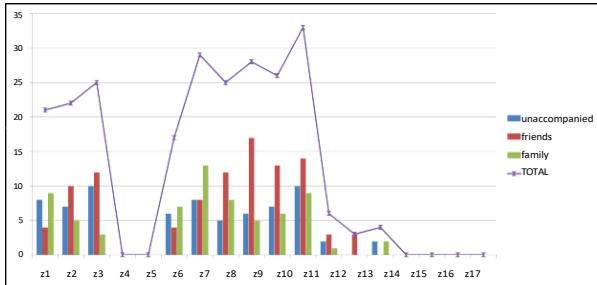
- Gender neutral zones

- Female dominated zones

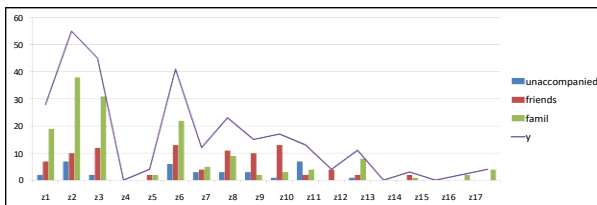
- Male dominated zones

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1. Morning (5:30AM - 8:30 AM)



2. Evening (4:30 PM - 6:30 PM)



3. After - dark (6:30 PM - 8:30 PM)

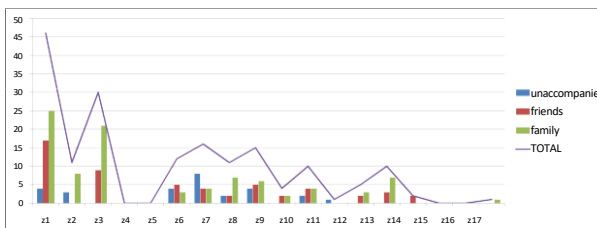
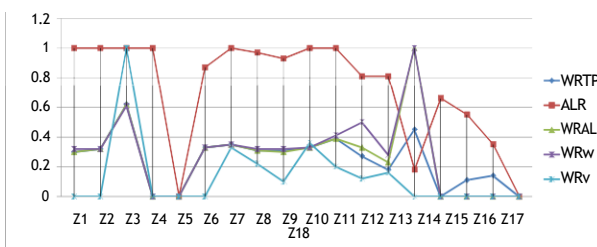
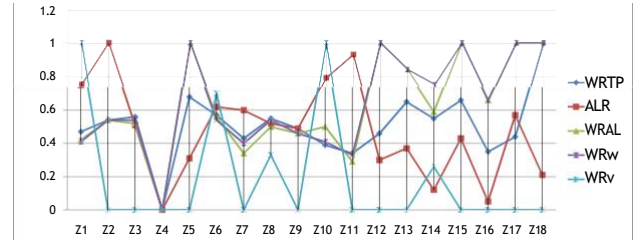


Figure 3. Grouping patterns of park's active female users at
1) Morning, 2) Evening and 3) After Dark. (Source: Author)

1. Morning (5:30AM - 8:30 AM)



2. Evening (4:30 PM - 6:30 PM)



3. After - dark (6:30 PM - 8:30 PM)

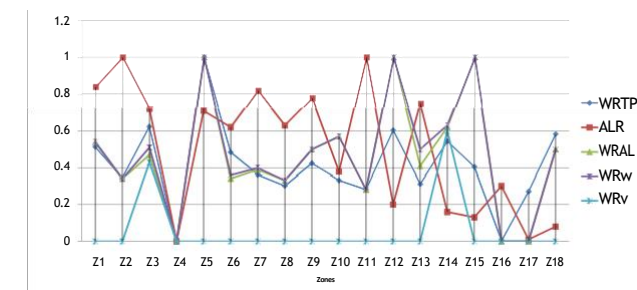


Figure 4. Zone-wise analysis of women occupying the park:
1) Morning; 2) Evening, 3) After Dark. (Source: Author)

6.1. Inferences on park infrastructure and design

The detailed zonal analysis of user counts during the 3 time periods revealed several infrastructural factors that promoted or deterred women's activity. A zone-wise mapping of the results (Figure 5) illustrates the various design and infrastructure parameters that promoted or deterred women's presence and participation in selected zones.

6.1.1. Morning (5:30am – 8:30 am)

The study shows that 28% of users engaged in active living were women. Further analysis (Figure. 4) revealed that zones 3 and 14 had a higher presence of women engaged in active living. These zones, unlike others during this time, had adequate lighting, could be accessed by two or more paths, had no dark corners, were visually linked to more than three zones and was closer to the main entrance (Zone 3 performance mapping in Figure 5).

Zones 15,16,17,18 had no women engaged in active living due to sparse lighting hence making it hard to be visually connected to its neighbours. Zones positioned on higher ground away from the entrances also were unfavorable to women (Zone 15 performance mapping in Figure 5).

The remaining zones have a lower presence of women when compared to men. These zones are sparsely lit and the interviews suggest that women do not prefer being active in male dominated zones. Zones 4 and 5 are closed during this time.

6.1.2. Evening study (4:30am – 6:30 am)

The study shows that 54% of users engaged in active living were women. Zones 5, 12,13 saw a higher presence of active women (Zone 5 performance mapping in Figure 5). Survey results indicate that adjacency to the children's park, Napier museum and the presence of CCTV cameras and seating brought in a lot of family user groups to these zones which is a favorable factor for women.

Zones 1, 2, 3, 6, 7 are located along a single visual axis and has public surveillance due to the families gathered next to public amenities (Zone 1 performance mapping in Figure 5). Zones 14, 15, 16 and 17 have fewer women engaged in active living (Zone 14 performance mapping in Figure 5). This illustrates the survey indication that presence of large number of men engaged in active living is unfavorable to women.

6.1.3. After-dark (6:30 pm – 8:30pm)

The study showed that only 44% of users engaged in active living werewomen. This time saw the least number of unaccompanied women. Contrastingly, more unaccompanied men were observed during this time. Zone 3, 13 and 14 are gender neutral as it's located next to the radio park which attracts a large number of families with children (Zone 13 performance mapping in Figure 5). Zone 1, 9 and 10 are also gender neutral as these zones are located next to the entrances and near the security offices which increase the perception of safety (Zone 10 performance mapping in Figure 5).

7. CONCLUSION

This study of the Museum compound not only highlights the active living preferences of its users but also illustrates the intrinsic gendering that happens in our public spaces. Even in a park that is considered the most popular and safe in the city, women follow unseen boundaries. These boundaries dictate their social grouping patterns, the activities they pursue, as well as the times and spaces they occupy within the park. While women definitely had a presence in the park (44% of all users and 45% of all active users during the study), they were mostly accompanied by families, preferred certain times and zones over others, and showed a tendency to not loiter. The zonal analysis revealed the factors that promoted women's

participation in active living pursuits in a zone. These include the presence of families and other women, lighting, higher visual and physical linkages, presence of surveillance and security systems and easy access.

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Figure 5. Analysis of selected zones linking active living patterns to park infrastructure, physical and visual accessibility. (Source: Author)

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