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GREENING FOR COMFORT: HOW PLANTING DESIGN SHAPES USER EXPERIENCE AT ESPLANADE PARK KUANTAN

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ABSTRACT

Planting design is essential to leverage quality of life while promoting mental health and social interaction through well-designed green spaces. However, at this Esplanade Park Kuantan, the existing planting design seems to be ineffective in providing comfort to the users. Thus, this research aims to investigate the effect of planting design at Esplanade Park Kuantan in enhancing comfort and experience for user. The result of this study assesses to identify the most key planting elements that enhance comfort and satisfaction. Besides, to evaluate the planting design at Esplanade Park in influencing users' comfort, satisfaction, and overall users' experience in mental well-being, particularly through promoting relaxation and fostering a sense of calm. The study employs site observations and questionnaire survey by 33 respondents through a convenience sampling method. The findings reveal that large shade trees, plant diversity, and thoughtful plant arrangements significantly contribute to the park's aesthetic appeal and functional comfort. Most respondents prioritize shade provision, particularly for activities like strolling, exercising, and playing in the playground, while also recognizing the calming effect of greenery on their time spent in the park. The research emphasizes the need for ongoing improvements to the park's planting design to better meet user preferences and foster a more enjoyable, relaxing, and community-oriented environment.

Keywords: *Planting design, Waterfront parks, User comfort, Experience, Esplanade Park Kuantan*

INTRODUCTION

Waterfront parks are essential toward improving the quality of life of urban people as they serve for recreation and leisure, environmental health and social interaction. Planting design is believed as the main elements to create a good visual and functional spaces. Wolch et al. (2014) highlights the importance of green spaces on user comfort. The importance that has been mention are to restorative environments, supporting emotional well-being and social interaction. Besides, planting design is also essential of urban form in influencing outdoor thermal comfort, particularly in tropical climates and in promoting discomfort mitigation.

To achieve the objectives of the study, Esplanade Park Kuantan has been selected as the study area. The park is a popular as recreational spot along Kuantan's waterfront, integrates a variety of planting design elements that not only contribute to the aesthetic appeal but also contributing in term of thermal comfort, psychological well-being and the overall user experience through plants selection, arrangement and management. The study's focus on the outcome of the research planting strategies that can highlight the waterfront park design, increase user comfort, making waterfront spaces more inviting and conducive to physical and mental health.

LITERATURE REVIEW

Planting Design at Waterfront Park

Planting design plays a main role in waterfront parks. It affects the visual aesthetics of the space, functionality and comfort. In the context of waterfront parks, planting design enable to emphasise visitors' sense of well-being and encourage prolonged park use. One of the most important functions of planting design in waterfront parks is providing shade to reduce heat and enhance thermal comfort. Ali et al., (2019), shows that tree canopies significantly can reduce ambient temperatures and creating a more comfortable environment for park users. The suitable arrangement of shade trees in a park often gives higher visitor satisfaction especially in tropical climates like Malaysia, where the heat can be high (Hamzah et al.,

2021). For example, strategically planted trees along walkways, seating areas and activity zones provide a cooler microclimate, encouraging social interactions and outdoor recreation. Besides, planting design provides visual appeal of waterfront parks, encourage an emotional connection between visitors and the natural environment. The selection of flowering plants and greenery plants creates a sense of tranquility and relaxation among park users. Ismail et al., (2020), found that diverse vegetation with vibrant flowers or unique foliage draw attention to the visitors and positively impacts their mental health by reducing stress and anxiety. This aligns with the "biophilia hypothesis," which is suggests that humans have to connect with nature through well-designed parks.

Planting design defines spaces and supports various park activities, such as jogging, picnicking and exercising. Shrubs and soft landscapes guide movement and enhance functionality without obstructing the park users' views (Henderson, 2013). Green spaces with shaded seating foster relaxation while open areas accommodate active uses. By strategically incorporating shade trees, colourful plant species and versatile green spaces, waterfront parks can provide more enjoyable and meaningful experience for visitors.

Waterfront Parks and User Experience

Waterfront park provide environmental, social and psychological benefits to city dwellers. Waterfront park plays an important role in promoting the quality of life by providing recreational spaces to support (i) physical, (ii) mental health and (iii) social activities. According to Wu et al., (2024) the greenery natural environments can give a benefit on urban mental health by reducing stress. The landscape design that needs to focus are planting arrangement, walkways and seating areas that can influence user experience. The strategic greenery can encourage comfort and exploration (Chen & Ng, 2012; Korpela et al., 2014). Besides, seating can encourage social interactions (Geng & Zheng, 2021). Overall, well-designed green spaces are crucial for the benefit of mental health and comfort in urban settings.

Planting Selection and Planting Arrangement in Waterfront Park

Waterfront park incorporates local planting designs which are (i) planting selection and (ii) planting arrangement. This waterfront park highlights the elements such as clear visibility and accessibility. These design principles ensure that visitors can easily reach the park, enjoy leisurely strolls and engage with others in well-planned gathering spots.

Planting selection is essential to get sustainable landscape design, ensuring that chosen species adapt in certain environments while fulfilling ecological and aesthetic roles. It requires careful consideration of factors such as light, water, soil conditions, and functional roles, such as providing shade or supporting biodiversity (Oklahoma State University, 2024). The plant selection often use in waterfront park is shade trees, such as Quercus spp. (oaks), Samanea saman (rain trees) and Hopea odorata (Merawan Siput Jantan) (Todorova et al., 2020). Besides, ground covers and grasses, like Festuca spp. (fescue) and Axonopus compressus (carpet grass), are also planted at the waterfront park.

Moreover, planting arrangement is seen important to arrange the plants within a designated area, considering factors such as spacing, layering, and grouping. This practice is important in landscape design, agriculture, and ecological restoration, as it influences plant health, growth efficiency, and the overall visual appeal of the space. In landscape design, arranging plants in groups and layers that mimic natural patterns is great for maintaining the natural appeal of an area. In addition, this arrangement also considers vertical layers with a combination of different plant heights and horizontal layers to show the variation (Hansen, G. 2017). For example, shade trees are often planted along paths and seating areas in in waterfront parks (Todorova et al., 2020).

The Benefits of Planting Design in Waterfront Parks

The significance of diverse plant species and planting arrangements in the waterfront parks plays a crucial role in creating (i)aesthetic function, (ii)ecological function and (iii)cultural significance. The aesthetic functions are to boost relaxation, fostering mental well-being by creating spaces that feel safe, tranquil and inviting such as colorful flowerbed. Green spaces

are important for mental health and well-being. It helps people recover from mental fatigue and improve mood (Bratman et al., 2019). Studies in Malaysian parks show that a mix of trees, shrubs, and flowers can create designs that positively impact mental health (Zainol et al., 2011). At Esplanade Park, elements like flowering shrubs and water features create a peaceful environment that promotes relaxation and mindfulness through sight and sound. Thus, natural elements indicate to reduce anxiety and promote calm (van den Bosch & Meyer-Lindenberg, 2019).

Besides, the ecological functions are contributing to mitigate urban heat island, promote biodiversity, offering habitats for wildlife while fostering connection between people and nature. Moreover, the cultural significance is increase user experience for walking that encourage social interaction and provide essential shade (Shahidan et al,. 2012). Besides, parks with thoughtfully chosen vegetation patterns and seating support spontaneous social interactions and a feeling of community (Gehl 2011). According to research by Mehta (2014), people are more likely to interact socially in parks with lots of natural areas because they are more inclined to interact with others and their surroundings.

RESEARCH METHODOLOGY

The Site Study Area

Figure 1. Key Plan
(Source: https://maps.google.com/)

Figure 2. Location Plan
(Source: https://maps.google.com/)

Figure 3. Site Plan
Source: https://maps.google.com/)

The Kuantan Esplanade is the longest waterfront esplanade in Peninsular Malaysia. It stretches from the Kuantan Municipal building on one and to the river cruise jetty on the other. It connects various transport nodes for the city including the Kuantan bus and taxi terminals, allowing the pedestrian to enjoy the majestic view of Kuantan River and all its river activities.

Esplanade Park Kuantan is strategically located at the city centre, in front of the current Hospital Tengku Ampuan Afzan and beside the Kuantan River. The specific location of Esplanade Park is at Jalan Tanah Putih, 25100 Kuantan, Pahang as in Figure 3. In 1850, Kampung Teruntum was the name given to Esplanade Park Kuantan when it had been established by Haji Senik. Small businesses and fishing were the main economic activities at this area. The cemetery close to Esplanade Park Kuantan serves as the primary proof that the village was established.

As in Figure 3, the study area covers 3 acres which include both recreational and parking spaces. The mapping identifies activities for each space at Esplanade Park Kuantan. Upon arrived, park users park their vehicles at the parking lot which near with public toilet and two stalls. By entering the recreational space, there are fishing spot along the riverbank, exercising, picnic, playground and selling activities. Esplanade Park also become one of Kuantan seasonal event space of water recreational activities and aesthetic stalls like Pasar Sera.

The Stages of Data Collections

This research employs site observation and questionnaire survey

methods. Firstly, the observation has been conducted at the site to establish the main issues at the site which is the neglected planting design that effect users' comfort. The aim of this site observation is to evaluate the planting design at Esplanade Park in influencing users' comfort, satisfaction, and overall experience. Over three days, observations are conducted in the morning, evening and night to capture variations in park usage. Throughout the observation, plants condition, activities during morning, evening and night session are observed. All the information has been recorded in the provided checklists and mapping.

Secondly, online self-administered survey is conducted to identify key design elements in determining specific planting elements contribute most significantly to positive user experiences. Survey is used to gather comprehensive feedback from park visitors to access the planting design influences towards users' comfort, satisfaction and overall experience. In this regard, shade provision, seating arrangements and vegetation near activity areas assessing the role of greenery in promoting mental well-being, relaxation and comfort are considered. The survey used a convenience sampling method because the sample are chosen only due to one prime reason which is local user that live within the radius of 60 meters. This study uses 60 metres radius from the site plan as in Figure 3 because this is small-scale exploratory studies to maintain feasibility and efficiency in data collection. This approach can produce user perceptions from various age categories, genders and usage patterns. This can bring together multiple perspectives on planting design and user experience. The survey targeted a sample size of 33 park users. Then, pilot test is done in a small group of approximately 10 respondents to identify potential ambiguities or technical issues with the Google Form. Finally, the survey QR form is distributed to Kuantan Esplanade Park users.

Methods of Data Collection

This research uses two methods which are (i)site observation and (ii) questionnaire survey. The site observation aims to explore how the presence of greenery enhances users' experience in mental well-being, particularly through promoting relaxation and fostering a sense of calm. Meanwhile, questionnaire survey is used to identify key design elements and to evaluate the planting design. These two main methods allow for a comprehensive

analysis of both the physical elements of the park's planting design and users' comfort and experiences.

Direct Site Observation

The direct site observation focuses on various factors such as plant species and greenery area that influence activity. It aims to understand how greenery impact seating and relaxation preferences. An observation checklist is used to record document the variety of plant species and their planting arrangement, assessing their contribution to user comfort and park aesthetics. The spatial relationships between planted areas and activity spaces will be examined through site observation to assess (i)planting selection, (ii)planting arrangement and (iii)maintenance increase park usage. Observations will be conducted over three days include weekend and weekdays that cover different sessions to capture a range of park usage patterns, with photographs and field notes supplementing the data collection.

Table 1. Site Observation Details

Aspect	Details
Duration of conduct	3 days (17/11/2024 until 19/11/2024)
Days of week	Weekend & weekday (Sunday, Monday and Tuesday)
Rationale	Conducting observation on weekend and the weekdays to captures different users of the park and their behavioural patterns as well as levels of engagement in the activity. This approach allows researchers to explain the variations in the activities and purpose of visit.

Table 2. Elements and Techniques of The Site Observation

Aspects	Details	Methods
Element to be observed	1. Types & species of plants 2. User interactions	1. Site Inventory on vegetation such as types, species, usage and conditions of plant. 2. Mapping technique: Record social interactions and engagement with the environment in morning, afternoon, evening and night.

Survey

The survey is conducted through Online Self-Administered questionnaire. It aims to evaluate the planting design at Esplanade Park in influencing users' comfort, satisfaction, and overall experience. This method will be conducted using a survey form designed through Google Forms to facilitate data collection. This survey finalize survey divide into four sections which are (i)demographics and usage patterns, (ii)plant selection, (iii)plant composition, (iv)maintenance and management. The 22 items with multiple-choice question, Likert scale and ranking questions. After completing the google form survey, the link is generated in the form of Quick Response (QR) to make it easier for park users to access and answer the questionnaires.

The survey explores various aspects of the user experience including the preferences of different types of plants, satisfaction with shaded area, choosing a shady seating, perception of temperature drops by plants, the use of plants at the activity areas, show it affects their comfort and participation in recreational activities. The survey focuses on diverse group of park users based on different age groups, genders and use patterns. The sample size of 33 respondents is set through the sample size calculation from Slovin's Formula which ideal for small to moderate sized populations. This formula allows the study to efficiently determine the number of respondents needed to analyse the preferences and comfort levels of park users while maintaining accuracy within the designated area. The approximate park user count of 50 people determines a sample size sufficient to represent the population as shown with the formula below:

$n = N \div (1+N \times e^2)$

Where:
n = Required sample size
N = Population size
e = Margin of error (expressed as a decimal, e.g., 0.05 for 5%)

$n = 50 \div (1+(50 \times 0.1^2)$
$n = 50 \div 1.5$
$n = 33.33$

n= 33 sample sizes

Based on the calculation, the study needed 33 respondents from park users to complete the survey to achieve an appropriate amount of feedback.

Data Analysis

The direct site observation is analysed by using SWOT analysis to identify strengths, weaknesses, opportunities and threats at the site. In this regard, checklist and mapping is used to visually the plants species, plants conditions and plants arrangement. Besides, this method supports in observe the park user social interactions and engagement with the environment in morning, afternoon, evening and night.

Meanwhile, the survey is analysed through evaluate the planting design at Esplanade Park in influencing users' comfort, satisfaction, and overall experience. The data use descriptive statistical analysis. In section A, the data analysed by using through percentage for demographic variables. Besides, in section B use percentage and mean score to analyse the data while in section C and section D, the data be analysed through percentage. The formula for determining the mean score is as follows (Gravetter and Wallnau 2017):

$$\text{Mean score} = \frac{\text{Sum of all values}}{\text{Number of responses}}$$

DATA ANALYSIS AND FINDINGS

Site Observation Findings

This study uses site observation method that can be documented such as plant species, conditions, activities and the role of greenery in user comfort.

Table 3. Existing Plant Species at Esplanade Park Kuantan

Category/ Scientific name	Common name	Overall height (m)	Condition	Arrangement	Roles
Palms					
Cocos nucifera 	Coconut Palm	5	Good	Linear planting	Sense of direction
Wodyetia bifurcata 	Foxtail Palm	3	Good	Linear planting	Aesthetic appeal
Trees					
Mimusops elengi 	Spanish Cherry	2.5	Good	Linear planting	Cooling effect and shade
Delonix regia 	Semarak Api	4-6	Good	Cluster planting	Aesthetic appeal and shade
Terminalia mantaly 	Madagascar Almond	2	Good	Cluster planting	Aesthetic appeal
Casuarina equisetifolia 	Pokok Ru	6	Good	Cluster planting	Shade
Shrubs					
Turnera subulata 	Cuban buttercup	0.5	Good	Radial planting	Attract bee and aesthetic appeal

Pandanus pygmaeus 	Dwarf Screwpine	0.3	Good	Zigzag planting	Aesthetic appeal
Leucophyllum frutescens 	Texas sage	0.3	Good	Zigzag planting	Aesthetic appeal
Ruellia simplex 	Mexican petunia	0.5	Moderate	Zigzag planting	Aesthetic appeal
Allamanda cathartica 	Golden-trumpet	0.3	Good	Radial planting	Aesthetic appeal
Hibiscus rosa-sinensis 	Hibiscus	0.3	Good	Zigzag planting	Aesthetic appeal

A varied selection of plant species creates a thoughtful balance of aesthetic and functional elements. Palms and trees are strategically selected to provide shade, cooling effects and visual interest, while shrubs support both biodiversity and aesthetic appeal. Most plants are in good condition. However, only Ruellia simplex needs attention. Diversity in overall height, roles and conditions of plants creates a harmonious landscape and can promote environmental comfort, visual enhancement and ecological benefits.

Figure 4. Mapping of Key Activities in Morning, Afternoon and at Night

The planting design at Esplanade Park Kuantan can emphasize the social interaction and engagement through improving the park users experience. In playgrounds area, shade trees and turf grass can offer comfort and safety for morning and evening use. Along waterfront paths, linear plantings of medium height or native coastal trees can provide shade and visual appeal for runners and cyclists. In addition, in open areas, clusters of large shade trees and ornamental plantings can support leisure activities, picnics and selling activities while creating a multi-functional space. A combination of native plant species and proper lighting can ensure the sustainability and usability of all areas at night with diverse activities.

Survey Findings

Section A – Demographic Profile

Table 4: Results of Demographic Profile

S=33 Respondents			
Description	**Variable**	**Frequency**	**Percent (%)**
Gender	Male	6	18.2
	Female	27	81.8
Age	18-25	20	60.6
	26-40	9	27.3
	41-60	3	9.1
	60-65	1	3.0

Travel Distance	60 meters radius from park	28	84.8
	Above 60 meters radius from park	5	15.2

The demographic profile of the respondents, as outlined in Table 4, reflects a diverse representation that provides valuable insights into the characteristics of respondents who took part in the study. The analysis found that there are 81.8% women who visit Kuantan Esplanade Park compared to only 18.2% men. Most respondents were between the ages of 18 until 25 years old. Meanwhile the lowest age from respondent is 60 until 65 years old, 3%. Many visitors live within 60 meters radius from the park, underlining the park's popularity locally due to convenience distance.

Table 5. Results of the Trip Profile of Park Visits

Description	Variable	Frequency	Percent (%)
Frequent visit	Daily	1	3
	2-3 times per week	3	10
	once a week	12	40
	1-2 times per month	4	14
	rarely	10	33
Visit preferable	weekdays	5	17
	Weekends	25	83
Preferable time to visit	Morning	5	17
	Afternoon	0	0
	Evening	9	30
	Night	16	53

Table 5 provides valuable insights into the visitation patterns and preferences of park users at Esplanade Park Kuantan. Additionally, the survey provides a high preferable park users frequent to visit Esplanade Park is once a week with 40% while the least visit frequent is daily visit with only 3%. The park users preferable day and time to visit is on weekends with a total of 83% respondents and at night with a total of 53% respondents. The most unpreferable time to visit is at afternoon. This is due to the weather and active activity that more comfort and preferable at night than at the afternoon.

Section B – Plant Selection

In the survey, a rating of "3" is considered "neutral," with "1" and "2" representing "least important" and "less important," respectively. Furthermore, the scale includes two higher ratings, "4" and "5" signifies "important," and "most important."

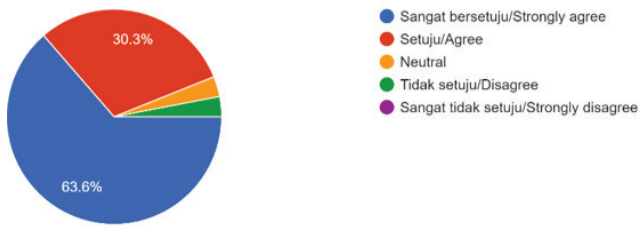
Table 6. Distribution of Respondents' Preferable on Key Planting Selection Elements Based on Comfort

Plants Category	Number of Respondents	Mean Score	Std deviation
Large Shade Tree	33	2.15	1.349
Flowering Shrubs	33	1.97	1.262
Groundcover	33	2.00	1.436

Based on table 6, large shade trees are the most important main element of planting selection to ensure user comfort at Esplanade Park Kuantan. Other elements, such as flowering plants, ornamental grasses and plant arrangements, play a supporting role that mainly contributing to the aesthetics of the garden and the quality of the overall landscape.

Quantitative data revealed that 19 respondence agree that large shade trees is the most important in influencing comfort for the park users. While the least planting design element chosen as the most important (15 respondence) is groundcover plants. Besides, flowering shrubs have been chosen by 18 respondence. This might be used to explore relationships between demographic factors likes age, gender and specific preferences such as which age groups prefer more green space or shading. This perception collected from both the site observation and survey analysis to help identify the key factors that enhance user experience.

Figure 5. Respondents' Perception of Plant Diversity at Esplanade Park Kuantan



The analysis found 63.6% of the respondents strongly agree regarding Esplanade Park Kuantan have a good variety of plants that enhanced their overall experience. Only 3% of the respondents chose neutral and disagreed that the variety of plants at Esplanade Park Kuantan can improve the park user's experience. This shows the majority of respondents agree that plant diversity is a major contributor to the attractiveness and comfort of the parks.

In the survey, a rating of "3" is considered "neutral," with "1" and "2" representing "least important" and "less important," respectively. Furthermore, the scale includes two higher ratings, "4" and "5" signifies “important," and "most important."

Table 7. User Perception of Shade Provision for Various Activities

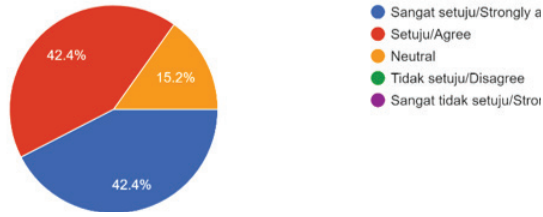
Activities	Number of Respondents	Mean Score	Std deviation
Strolling	33	2.15	1.417
Exercising	33	2.55	1.301
Picnicking	33	2.00	1.458
Playing playground	33	2.45	1.121
Selling	33	1.88	1.219
Fishing	33	1.94	1.413

Based on table 7, the most preferable activity that need shade provision is exercising with total mean score 2.55. The data show that the provision of shade significantly improves user comfort and encourages active use of the park in encouraging outdoor physical activity. These findings prove that shading plays an important role in ensuring comfort during prolonged activities, especially in the hot and humid climate of Malaysia. The least score is shade provision for selling activities with 1.88. This finding is least due to the seasonal activity and from visitors that not involve in selling activities.

The findings revealed that activities such as strolling, exercising and playing in the playground are the most important in the need for shade provision for user comfort. On the other hand, activities such as fishing and selling activities show a more diverse perception of the importance of shade. This happens due to personal preferences and different activity characteristics.

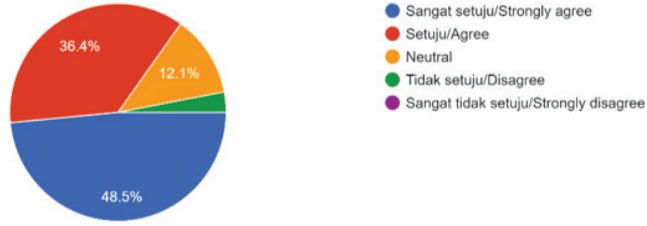
Section C – Plant Composition

Figure 6. Respondents' Perception of Aesthetic Visual Composition of Plants



The results depicted in Figure 6 indicate some range of opinions, with 42.4% of respondents expressing that they are strongly agree and agree about the existing visual composition of plants in the Esplanade Park Kuantan is aesthetically pleasing. Meanwhile 15.2% of respondents considering aesthetic visual plants composition is neutral. The findings revealed that the park user satisfied with the planting visual composition.

Figure 7. Respondents' Perception of Plants Placement that Provides Sufficient Shaded Areas



Analysis of respondents' perceptions of plant placement in Kuantan's Esplanade Park shows a positive response to the provision of shade areas. A significant 48.5% of respondents strongly agreed that effective plant placement provided sufficient shade and showed a high level of satisfaction with planting design in park. There are no respondents thought that plant placement provides insufficient shaded area. The finding prove that correct placement of plants is an important element in creating a shaded area that can provide comfort to park visitors.

Figure 8. Respondents' Perception of Planting Layout Influence Time Spent

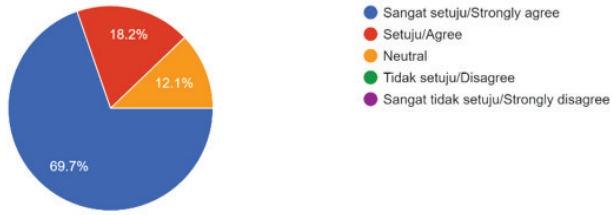


Figure 9. Cluster planting arrangement

Figure 10. Linear planting arrangement

Based on figure 8, the analysis found that 69.7% respondents strongly agree about the plant arrangement at Esplanade Park influence the park user spend their time that support with figure 9 and 10. There has no respondent thought that planting arrangement not influence the time spend for the park user. These findings highlight the success of plant arrangement in attracting and guiding park user to involve in suitable activities while also indicating opportunities for further refinement to address neutral perspectives. Overall, the results confirm the important role of plant arrangement in enhancing the visitor experience and function of Esplanade Park Kuantan as a waterfront park.

Section D – Maintenance and Management

Figure 11. Respondents' Perception of Plants Maintenance and Condition

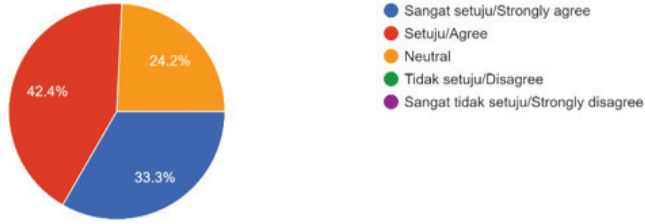


Figure 11 shows the analysis of respondents' perceptions of the maintenance and health of plants at Esplanade Park Kuantan. In general, this analysis reveals a large number of respondents, 42.4% agree that the plants in the park are well maintained and healthy, reflecting satisfaction. Meanwhile, there has no respondent that thought plants at Esplanade Park Kuantan do not have good maintenance and condition. Overall, all respondents thought that the maintenance of plants at Esplanade Park Kuantan was good. This finding shows that the maintenance efforts of park plants are generally successful. Thus, it shows that plant maintenance and health is a significant strength in the park management.

DISCUSSION

The findings reveal the planting design element lead the types of activities people engage in the park. For example, many enjoy jogging and cycling along the seaside path during mornings and evenings which highlight the need for spaces that encourage physical activity. The popularity of evening picnics and leisure activities suggests a demand for flexible areas that cater to diverse user needs.

The research indicates that provide a shade by using native coastal plants significantly enhance the park's comfort and usability. High activity levels at the playground during evenings suggest a need for planting strategies that offer daytime shade while ensuring visibility for safety at night. Along the seaside path, medium-height of native plants can create a visually appealing shaded environment for joggers and cyclists without obstructing movement.

Additionally, the study highlights the importance of considering cultural and social dynamics in planting design. The popularity of leisure activities and informal selling in open spaces during evenings presents an opportunity to develop gathering spots with natural canopies and decorative plants. Incorporating seasonal flowering trees could enhance the park's beauty while promoting biodiversity. By tailoring planting strategies to user preferences, Esplanade Park can become a more inclusive and engaging space.

These findings underscore the value of a comprehensive approach to planting design in public parks. Using native, low-maintenance plants and strategically placed greenery can support various recreational activities while ensuring sustainability.

CONCLUSION

The study describes about the presence of greenery emphasize users' experience in mental well-being, particularly through promoting relaxation and fostering a sense of calm. By addressing the gap in knowledge regarding the effectiveness of current planting strategies, the research emphasizes the importance of well-planned vegetation in improving comfort, mental well-being, and fostering community engagement in waterfront parks. The findings are expected to guide future planting strategies, promoting relaxation, biodiversity, and stronger community ties, ultimately enhancing the park's role as a recreational and social space.

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