



# The Perception of Social Safety in a Green Environment: A preliminary study at the Kepong Metropolitan Park

Sretharan Maruthaveeran

Forest Research Institute Malaysia (FRIM).  
52109. Kepong, Selangor Darul Ehsan, Malaysia

*sretherantsifrim.govmv*

## Abstract

Although there are many positive benefits gained from green areas, it is possible that people also have a negative perception towards such areas. Previous studies have shown that natural areas are sometimes perceived as scary, disgusting and uncomfortable when the sites are more densely vegetated, particularly when the vegetation is not apparently maintained and crime is often cited as a reason to avoid densely wooded areas. Based on this notion, a preliminary survey was conducted at Kepong Metropolitan Park. A total of 69 park users were interviewed. A questionnaire was designed to provide information on the users' perception of personal safety based on vegetation composition in urban parks. The perception of personal safety was based on photos taken before the survey. These photographs were taken at several urban parks in Kuala Lumpur. Out of 66 photographs taken, only 24 photographs were chosen for this study. The selection of the photographs was based on the type of vegetation such as topiary, young trees, matured trees, open space, hedges, shrub, water plant, bamboo, non-woody plants, and palms. Each of these photographs was identified with a numbered label. The respondents were requested to assess the type of surrounding vegetation they regarded as providing the safest environment. This study indicated that a photograph representing topiary plants was chosen by most park users as providing the safest park environment. On the other hand, a photograph depicting a pool with tall water grasses was considered as providing the least secure environment. This preliminary study revealed that people preferred parks which are more organized, maintained and well managed with a 'more formal' landscape setting. This study only presents preliminary evidence for the idea that a green environment can contribute towards fear and the feeling of being unsafe.

Keywords: Garden Nation, environmental design, public space, safe city, fear

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## 1.0 Introduction

The majority of research on urban parks in Malaysia focuses on the usage and recreational needs of the user. However, few studies link vegetation to fear and crime in urban parks. In the excitement of transforming Malaysia into a Garden Nation through planting trees and establishing public parks around the Federal Territory of Kuala Lumpur, special attention should also be given to the type of vegetation in our urban parks in order to provide a safer environment.

Apart from the many positive benefits and meanings gained from green areas, people might also have negative perceptions on parks. Many people fear natural areas for safety reasons. Green spaces or urban parks are not liked by everyone all the time. There are existing sites which are underused, in part because they are often seen as threatening places where crime could frequently occur. Studies have shown that natural areas are sometimes perceived as being scary, disgusting and uncomfortable. Parks are also perceived as risky when the sites are more densely vegetated, particularly when the vegetation is not apparently maintained and crime is often cited as a reason to avoid densely wooded areas. People prefer parks which are more organized, maintained and managed or having a 'more formal' landscape setting. However, this does not mean parks always invite crime. The implementation of the National Urbanisation Policy and the Kuala Lumpur Structure Plan 2020 for creating a safer urban environment, has stirred the researcher's interest to conduct a preliminary study to assess the perception of personal safety based on vegetation composition in urban parks by using photographic images.

## 2.0 Literature Review

Although there are many positive benefits and meanings gained from green areas, people may also have negative perceptions about such areas. Many people fear natural areas for safety reasons. Social safety refers to safety resulting from human behaviour and interactions between people in public space (Van Winsum-Westra and De Boer, 2(04). Safety can be judged both objectively (safety measured by facts and figures) and subjectively (perceived safety experienced by the individual) (Van Winsum-Westra and De Boer, 20(4). Objective social safety may differ from subjective social safety but in terms of behavioural constraints, it is subjective safety which influences behaviour and which causes people to avoid places they associate with insecurity (Maas, J. et al., 20(8).

As early as 1285, King Edward I attempted to reduce highway robbery by forcing property owners to clear highway edges of trees and shrubs (Pluncknett, 1960). Green spaces or urban parks are not liked by everyone all the time. Green space can be perceived as dangerous because it may facilitate crime by providing a hiding place for perpetrators of crime and may conceal criminal activity (Herzog and Flynn-Smith, 2001; Van Winsurn-Westra and De Boer, 2(04). There are existing sites which are underused, in part because they are often seen as threatening places where crime frequently occurs (Jacobs,

1961). Previous studies have shown that natural areas are perceived as scary, disgusting and uncomfortable (Bixler and Floyd, 1997). Parks are also perceived as risky when the sites are more densely vegetated, particularly when the vegetation is not apparently maintained (Schroeder, 1989; Michael and Hull, 1994) and crime is often cited as a reason to avoid densely wooded areas (Talbot and Kaplan, 1984). People prefer more natural looking areas which are more organized, maintained and managed or have a 'more formal' landscape setting (Kaplan, 1984; Schroeder and Anderson, 1984; Burgess et al., 1988, Millward and Mostyn, 1989 and Ozguger, H. and Kendle, A.D., 2(06), a hiding place for perpetrators of crime and may conceal criminal activity (Herzog and Flynn-Smith, 2001; Van Winsurn-Westra and De Boer, 2(04). There are existing sites which are underused, in part because they are often seen as threatening places where crime frequently occurs (Jacobs, 1961). Previous studies have shown that natural areas are perceived as scary, disgusting and uncomfortable (Bixler and Floyd, 1997). Parks are also perceived as risky when the sites are more densely vegetated, particularly when the vegetation is not apparently maintained (Schroeder, 1989; Michael and Hull, 1994) and crime is often cited as a reason to avoid densely wooded areas (Talbot and Kaplan, 1984). People prefer more natural looking areas which are more organized, maintained and managed or have a 'more formal' landscape setting (Kaplan, 1984; Schroeder and Anderson, 1984; Burgess et al., 1988, Millward and Mostyn, 1989 and Ozguger, H. and Kendle, A.D., 2(06).

Parks are also less preferred when perceived to be the setting for drinking, drug use, crime, teenage hangouts, rowdy behaviour and clashes with rangers (Schroeder, 1989). This may be true because safety and security is one of the six human needs besides physiological (e.g. food and shelter), affection belonging (need to belong to a group or community), esteem (need to be accepted), selfactualization (fulfilment of potential) and cognitive-aesthetic needs (Maslow, 1954). However, this does not mean parks always invite crime. A well-maintained, grassy area certainly does not block views; widely spaced, high-canopy trees have minimal effect on visibility; and flowers and low growing shrubs seem unlikely to provide cover for criminal activities (Kuo and Sullivan, 2001). In other words, whenever vegetation blocks views, the fear of crime is higher (Fisher and Nasar, 1992; Kuo, Bacaicoa and Sullivan, 1998; Michael and Hull, 1994).

Among urbanites' range of psychological and behavioural reactions to crime are distrusting others, avoiding particular places, taking protective action, changing their daily activities and participation in collective action (Miethe, 1995). Only recently, attempts have been made to refine the study of crime ecology. This was done by examining precisely the settings in which criminal acts have occurred (e.g., Ley and Cybriwsky, 1974) and users' perception of crime risk in different settings (Nasar, 1982). However, studies on crime ecology are still limited in this region. The absence of good information and the extensive press coverage given to criminal activity occurring in public places like parks, have established possibly underserved reputation for parks as high risk crime areas. This reputation discourages many potential site visitors from using and enjoying available recreation resources (Schroeder and Anderson, 1984). In addition, the public are also afraid

of becoming the victims of physical or sexual assault, robbery or bullying and intimidation from young people in the woodland (Burgess et al., 1988; McNaghten and Urry, 2000; Jorgensen et al., 20(7). Densely wooded areas have consistently been associated with fear. A study by Schroeder and Anderson (1984) showed that individuals felt most vulnerable in densely forested areas and safest in open, mowed areas. Another study by Talbot and Kaplan (1984) indicated that heavily vegetated areas seemed dangerous. In safety ratings for 180 scenes of parking lots, the more an area is covered by vegetation, the lower the perceived security (Shaffer and Anderson, 1985). In another study examining fear of crime in a university campus, dense undergrowth that reduced views into areas where criminals might hide were associated with fear of crime (Nasar & Fisher, 1993). Fear of crime is higher where vegetation blocks views (Fisher and Nasar, 1992, Kuo, Bacaicoa, and Sullivan, 1998; Michael and Null, 1994). It has been argued that formal or ornamental landscape is strongly valued by urban people who have been subjected to the neat and tidy approach of flowerbeds and mown grass in cities for sometime (Kendle and Forbes, 1997).

The abovementioned studies show that dense vegetation provides potential cover for criminal activities, possibly increasing the likelihood of crime and certainly increasing the fear of crime. Large shrubs, underbrush and dense woods all substantially diminish visibility and therefore are capable of supporting criminal activity (Kuo and Sullivan, 20(1). It shows that not all type of vegetation blocks view. A well maintained grassy area certainly does not block views; widely spaced, high canopy trees have minimal effect on visibility and flowers and low-growing shrubs seems unlikely to provide cover for criminal activity (Kuo and Sullivan, 20(1). However there are also studies that show that vegetation deters crime. For example Nasar (1982), found that higher levels of vegetation were associated with less fear of crime. Another study that used drawings of residences found that properties appeared safer when trees and shrubs were included than when they were not (Brower, Dockett and Taylor, 1983). These contrasting findings have prompted the present study to assess the perception of personal safety based on vegetation composition in urban parks.

### **3.0 Methodology**

#### **3.1 Data collection**

A survey was conducted in June 2007 at the Kepong Metropolitan Park. A total of 69 park users were interviewed. The survey method, based on a detailed questionnaire, was designed to interview users within the park. The selection of respondents was through random sampling. Interviewers approached each potential participant and introduced themselves by reciting or reading the following statement.

*"Hello, I'm (your name) from the Forest Research Institute Malaysia (FRIM) and we are conducting a study to assess the perception of personal safety based on vegetation composition in urban parks by using a photographic method."*

The questionnaire was designed to reveal the perception of personal safety based on vegetation composition in urban parks. The perception of personal safety was based on photos taken before the survey. These photographs were taken in several urban parks in Kuala Lumpur. Out of the 66 photographs taken, only 24 photographs were chosen for this study. This was based on the type of vegetation such as topiary, young trees, matured trees, open space, hedges, shrub, water plant, bamboo, non-woody plants, and palms. The selected photos were developed into 2" 0 3" prints and pasted into a clear file for easy handling. Each of these photographs was identified with a number. Visitors were then asked to rate the 24 photos by using a 5-point numerical rating scale (1 ==very unsafe, 2 == unsafe, 3 == moderately safe, 4 == safe and 5 == very safe). This was followed by two questions on which photograph best describe the scenes with the highest and lowest security. The visitors were also asked reasons for choosing the photographs. The interviewer concluded by requesting additional descriptive information (e.g., education background) from the participants.

### **3.2 Data analysis**

Questionnaire data were entered and analysed using SPSS statistical software. Descriptive analysis provided means, standard deviations and frequencies to describe the sample and variables of interest. A Reliability Test was carried out using Cronbach alpha. The choice of Cronbach is a better estimate of internal consistency of measures than other techniques (Corina, 1993).

## **4.0 Results and Discussions**

### **Socio-Demographic Profile of the Respondents**

Male respondents formed the majority (55.1 %) of the study sample and over half (50.7%) of the total respondents were aged between 21-30 years old. The majority of the respondents were degree holders (34.8%). Most of the respondents were government servants who earned an average monthly income between RM 100 I -RM 3000. A more detailed description is given in Table I.

### **Rating for Perceived Personal Safety on Vegetation Composition**

A reliability test was carried out using the calculation of Cronbachs alpha coefficient for the set of 24 photographs on the perceived personal safety based on vegetation composition in urban parks. The Cronbach's alpha coefficient was 0.866, which was found to be relatively high. This value is above the cut-off criterion of 0.7 recommended by Corina (1993). The mean score for each of the photos was calculated and the results are represented in Table 2. Out of 24 photographs, 19 photographs scored a mean value of more than 3 (safe). Photo 6 (Fig. 1) scored a mean value of 4.32 and was chosen as the scene considered safest by

the respondents. Photograph no. 6 represents a topiary plant. According to the respondents the main reason for choosing this photograph was because it was well maintained, had more space available around the plant (thus providing a clear view), were made up of small plants and was not bushy. It has been argued that ornamental landscape (e.g. topiary) is strongly valued by urban people who have been subjected to the neat and tidy approach of flowerbeds and mown grass in cities for sometime (Kendle and Forbes, 1997). Photo 23 (Fig. 2) (4.19) represents dense tree canopies, but these trees have high canopies which increases the visibility, and reflects spaciousness and cleanliness. Other scenes such as Photo 18 (Fig. 3) also scored a relatively high mean value (4.06) and they represent flowers and low-growing shrubs which seem unlikely to provide an ideal place for perpetrators to hide.

Table 1: Respondents's socio-demographic profile

<b>Demographic</b>	<b>Total (N=69)</b>
<b>Gender (%)</b>	
Male	55.1
Female	44.9
<b>Age (%)</b>	
< 20 yrs	
21 - 30 yrs	10.1
31 - 40 yrs	50.7
41 - 50 yrs	13.0
> 50 yrs	18.8
	7.2
<b>Education (%)</b>	
Primary School	
SRP/PMR	2.9
SPM	7.2
STPM	30.4
Bachelors Degree	8.7
Master Degree	34.8
No formal education	2.9
	13.0
<b>Occupational (%)</b>	
Government Servant	43.5
Firma	4.3
Self Employment	8.7
Others	43.5
<b>Monthly income</b>	
< RM 1000	
RM1001-RM3000	13.0
RM3001-RM5000	42.0
RM5001-RM10000	1.4
> RM 10001	7.2
Not earning	2.9
	33.3



Figure 1: Photo 6 shows a topiary plant in one of the parks in Kuala Lumpur . According to the respondents the topiary plants looks well maintained, spacious between the plants, not tall and increase visibility



Figure 2: Photo 23 represents a dense tree canopies, but these trees have high canopies which increases the visibility, spacious and looks clean. These features make people feel safe in parks.



Figure 3: Photo 18 shows a row of *Heliconia* sp. Even tough this photo shows thick vegetation but it is well maintained and does not block views .

Table 2: Mean rating and reasons of perceived personal safety by the park visitors (N= 69)

Photo	Mean	Std. Deviation	Reasons
Photo 6	4.32	.737	small size tree, no sharp objects, short trees, not bushy, spacious, neat, easy to escape, well maintained , bright , clear view.
Photo 23	4.19	.809	focal point, spacious, maintained, clean.
Photo 18	4.06	.838	short and small plants, peaceful , small flowers.
Photo 15	3.97	.804	near the road, attractive, comfort able, clean, maintained, peaceful feeling , wide pathway.
Photo 24	3.96	.962	open space, no obstruction.
Photo 8	3.96	1.117	open space, no trees, flat ground, no obstruction , no vegetation, large area, spacious, short grass , view not blocked.
Photo 3	3.94	.983	spacious between trees, have path, flat ground, bright, not many plants, open space, fenced.
Photo 20	3.78	.855	beside building, small trees, maintained, clean.
Photo 5	3.67	.995	Open
Photo 2	3.61	1.018	open, no obstacles.
Photo 7	3.55	1.105	-
Photo 13	3.51	1.066	open space, large area, big trees, big branches, old trees.
Photo 22	3.48	1.066	spacious, not hazard
Photo 11	3.38	.898	-
Photo 19	3.35	.937	tall bushes, congested.
Photo 21	3.35	.997	clean .
Photo 16	3.32	1.312	no railings, unfenced.
Photo 1	3.09	.966	open, no fence.
Photo 14	3.07	1.102	many trees, lonely, unmaintained, tall, dark, not clean, isolated, broken branches.
Photo 12	2.97	.822	dead tree, sloppy, no fence.
Photo 4	2.78	.998	branches could fall, brittle branches, hazardous trees, many trees, afraid of tree failing, branches not pruned.
Photo 10	2.43	.915	messy, big trees, dense trees, not fenced, pathway look small, , not bright, plants too close, tall and thick plants.
Photo 9	2.28	.820	dark, hidden, bumpy surface, open drain, failing branches, unmaintained, leaning trees.
Photo 17	2.03	.985	no hedges, no fence, muddy, children easily fall, toxic material, mosquito, disease, dirty pond, no systematic planting, no warning sign, swampy, unmaintained.

Note: Rating of perceived safety: (1=very unsafe, 2 = unsafe, 3 = safe, 4 = very safe and 5 = extremely safe).



On the other hand, photo 17(Fig.4)was considered the most unsafe scene. Photo 17 represents a scene of a pool with tall water grasses. However, the tall water grasses did not seem to block the view. This scene possibly makes the respondents feel unsafe because the area looked unmaintained, with long grasses (making it an easy place to hide) and the pool had murky water and therefore considered a place for mosquito breeding. Photo 9 (Fig. 5) (2.28) which consists of the heavily vegetated *Acacia* sp. trees was considered not maintained, dangerous, dark by the respondents. Photo 10 (Fig. 6) which also scored a lower mean value (2.43) had a row of palms with lower shrubs along a pathway. These palms were considered bushy, too dense and dark. This result agreed with other studies where dense unmaintained vegetation has been linked to a fear of crime (Shaffer and Anderson, 1985; Nasar and Fisher, 1993; Michael and Hull, 1994; Kuo, Bacaicoa & Sulli van).



Figure 4: Photo 17 shows unmaintained vegetation , murky water and a place for mosquito breeding



Figure 5: Dense vegetation, unmaintained and dark condition of Photo 9 creates feeling of social safety among park users

Traditionally, the belief has been that vegetation facilitates crime because it hides

perpetrators from view. However, this study shows that the respondents felt safe in a surrounding with vegetation in a natural or designed landscape which was well maintained, not dense, provided a clear view, was clean and spacious. Again, this shows that not all vegetation blocks views. Well maintained grassy areas, trees or shrubs certainly does not block views; high-canopy trees, spacious, low growing shrubs seem unlikely to provide cover for crime (Kuo and Sullivan, 2001).



Figure 6: Photo 10 shows unmaintained, tall and bushy vegetation which completely blocks the view of the park user who walks along the pathway.

This shows that species selection for planting purposes in parks should address not only the functional and aesthetic aspects of the city's built-up environment but needs to also consider the safety aspect. This study shows that landscape maintenance is an important factor which influences the social safety of park users. This is a very pertinent issue because a park should be a place for the public to enjoy rather than fear.

A test was also conducted to see whether there were significant differences in the perceptions of personal safety between gender and age. Previous studies have stated that women and elderly people actually feel unsafe in green environments (Burgess, 1988; Jorgensen and Anthopoulos, 2007; Jorgensen et al., 2002). However, this study did not fully support the idea that a natural landscape was considered 'threatening' or 'frightening' particularly by women (Burgess, J., Harrison, E. M. and Limb, M., 1988). In addition, there was also no significant difference among the respondents from different age groups about personal safety. This might be because about 50% of the respondents fell between the age group of 21-30 years. Only about 7% of the respondents were above 50 years old. This study only presents preliminary evidence for the idea that a green environment does influence the perception towards social safety. Due to the small sample size, further research is needed to

confirm the findings.

## 5.0 Conclusions

This study shows that not all vegetation generates fear among people. This study also shows that dense vegetation does link to general fears and to fear of crime in particular. The findings from this study could be considered as a start for a more in-depth study on the relationship between vegetation and personal safety. Further studies on species selection, plant arrangement and maintenance could even enhance the relationship between vegetation and personal safety. Urban design should not only be aesthetically pleasing but also provide a safe environment through proper environmental design such as guidelines on landscaping treatment. This has been stated clearly under the Kuala Lumpur Structure Plan 2020 where the City Hall (DB KL) shall draw up an Urban Design Framework together with a comprehensive set of Urban Design Guidelines to ensure public safety (KLSP 2020, 2(04).

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