

The Use of Urban Plazas

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ABSTRAK

Di Malaysia, faktor-faktor yang menyebabkan penggunaan plaza belum dikenalpasti. Memandangkan keadaan ini, satu kajian awal untuk menentukan faktor-faktor yang mempengaruhi penggunaan sesuatu plaza telah dijalankan keatas lima buah plaza di Kuala Lumpur dan Petaling Jaya.

Pemerhatian dan pengiraan bilangan pengguna pada setiap plaza dilakukan dan purata bilangan pengguna yang terdapat di plaza dan sekitarnya diambil kira. Data ini kemudiannya dikaitkan dengan ciri-ciri plaza dan ciri-ciri kontak kawasan sekitar plaza tersebut dengan cara Pekali Sekaitan Pearson. Data kajian menunjukkan bahawa plaza-plaza yang mempunyai bilangan tempat duduk yang teduh dan penanaman pokok-pokok hiasan yang banyak, dan terletak berdekatan dengan kedai-kedai runcit, restoran dan kawasan letak kenderaan biasa adalah digunakan dengan kadar yang tinggi. Manakala plaza-plaza yang terlindung kedudukannya atau tempat letak kenderaan bertingkat adalah kurang digunakan. Oleh kerana kajian ini merupakan kajian awal, maka kajian selanjutnya hendaklah dijalankan dengan lebih intensif dan terperinci untuk mengesahkan lagi hasil kajian.

ABSTRACT

In Malaysia, factors that contribute toward plaza use have not yet been identified. A pilot study to determine some of the factors that affect plaza use was conducted at five plazas in Kuala Lumpur and Petaling Jaya. Observation of each plaza was carried out and simple counts of the number of users within the boundaries of the plazas were taken. Mean use was determined and correlated with physical characteristics of the plaza and contextual characteristics of the surrounding area using Pearson Correlation Coefficient. Study data showed that plazas with more shaded seating, more plants and located close to retail stores, restaurants and surface parking tended to be heavily used. Plazas which were hidden or had a parking garage tended to be used less. Future studies need to be more intensive and refined in order to validate these findings.

INTRODUCTION

Profound changes have been observed in design characteristics of our urban landscape in the last ten years. As cities and towns are being developed, more and more public spaces adjacent to buildings have been built so as to enrich the quality of the urban environment. These public spaces, which are commonly known as 'plazas' are becoming part of city life serving important aesthetic, economic and social functions.

Despite the unlimited spectrum of uses and users, some plazas in this country are not heavily used, suggesting inefficiency of space utilization. Even though they are strategically located some of them are almost empty. A plaza's value de-

pends on the number of people using it. The higher the use the more efficient it is (Whyte 1980). Low use of plazas in this country may be due to 'feng shui' or geomancy or it may be due to the types of activities around the plazas. Therefore it is necessary to identify the cause.

Many studies conducted in the United States have shown that there is a relationship between plaza design and use. Jensen (Chidister 1988) believed plaza problems are due to the culture and lifestyle of the people. Past experiences, attitudes, habits, influence of others, environmental characteristics and constraints, knowledge and social norms have all been shown to affect behaviour (Chidister 1986). In an attempt to identify

critical ingredients for successful public spaces, Francis (1988) concluded that, despite research advances, public space design still favours owners, managers and designers without adequate attention being given to users.

Since there are many factors contributing toward plaza use, a preliminary study on the use of five plazas in Kuala Lumpur and Petaling Jaya was conducted. The purpose of the study was to determine the factors that might affect plaza use in Malaysia. A similar technique to that used by Chidister (1986) was applied in this study. This focused on the physical characteristics and plaza context. However, slight modifications were made to suit the local environment.

METHODOLOGY

Level of use, physical characteristics and contextual factors were measured for five plazas in Kuala Lumpur and Petaling Jaya. They are the Shangri-La Hotel Plaza (SLH), Daya Bumi Complex Plaza (DBC), Central Market Plaza (CTM), Damansara City Centre Complex Plaza (DCC) and Petaling Jaya Municipal Plaza (PJM). For each, use was measured on seven consecutive days (Monday to

Sunday). On each day simple counts of use were gathered for each plaza, at hourly intervals. The counting began at 10.00 a.m. and ended at 6.00 p.m. each day. Everyone within the boundaries of the plazas was included in the counts, without discriminating between types of use.

Use data for the seven-day period for each plaza were divided into mean use from 10.00 a.m. to 6.00 p.m. and mean use from 12.00 p.m. to 2.00 p.m. (lunch time). The two measures of use were correlated with physical characteristics of the plaza and contextual characteristics of the surrounding area. Six plaza characteristics and ten contextual factors were also correlated with plaza use. Pearson correlation coefficient was used for the analysis.

RESULTS AND DISCUSSION

Plaza Characteristics

The plazas that were selected for the study varied in size, amount of seating, number of trees and size of planted area (Table 1). The SLH plaza was the smallest plaza among the five with the smallest planted area, with the second-lowest number of

TABLE 1
Plaza characteristics

Plaza name	Plaza size (sq. m)	Linear metres of seating	Linear metres of seating per 100 sq. m of plaza area	No. of trees	No. of trees per 100 sq. m of plaza area	Size of planted area (sq. m)
Petaling Jaya Municipal (PJM)	7974.73	42.00	0.53	85	1.07	279.16
Daya Bumi Complex (DBC)	3849.87	371.00	9.64	90	2.34	650.54
Central Market (CTM)	4250.86	67.10	1.58	48	1.13	33.92
Damansara City Centre Complex (DCC)	4451.85	214.40	4.82	80	1.80	289.52
Shangri-La Hotel (SLH)	1243.96	16.20	1.30	15	1.21	0.00
Mean	4354.22	142.14	3.57	63.60	1.51	250.63
Standard Deviation	2401.00	149.26	3.77	31.74	0.55	260.78

seats while the PJM plaza was the biggest. Even though the DBC plaza was fourth in terms of size, it had the highest number of seats, trees, and size of planted area. Nevertheless, none of the plazas met the criteria set up by Whyte (1980) where the requirement was 1 linear foot of sitting space for every 30 square feet of urban plaza (1 linear metre = 9.14 sq. metre) or the equivalent of 33 linear feet of seating per 1000 square feet of plaza (Chidister 1986) (10.83 linear metre = 100 sq. metre).

However, the number of trees in all five plazas exceeded the minimum requirement set up by Whyte. This is very appropriate since our solar exposure is very intense. Malaysians do not like to sit in the hot sun, unlike people in temperate countries. The density of trees increased with the density of seating as well as with the linear metres of seating.

There was a high positive correlation between density of trees and density of seating and linear metres of seating (Table 2). A relationship was also found between linear metres of seating and size of planted area. This relationship was probably due to the overall design concept or the management attitude towards the plaza. However, from observations made, most of the seating was located next to planted areas or beneath trees. This explains why the density of trees increased with the density of seating and linear metres of

seating. Hence it could be said that those plazas with adequate seating also had adequate shade.

Plaza Use

The plazas were constantly and heavily used except for the SLH plaza. This was probably due to its location, as it is hidden by the buildings around it. The density of use ranged from an average of 1.91 people per 100 sq. m (during lunch time) to an average of 4.18 people per 100 sq. m for the entire day (Table 3). This is comparable to Whyte's study (1980) for plazas in Manhattan where the average density of use was 3.28 people per 1000 sq. ft. of plaza (approx. 3.53 per 100 sq m). Even though the plazas were consistently used, the usage level, however, was much higher before and after lunch time (i.e. from 10 a.m. - 12 p.m. and 2, - 6 p.m) compared to lunch time except for the PJM and the SLH plazas. The reason for the high mean use of PJM plaza during lunch time was due to the high number of restaurants and retail stores surrounding the plaza, while part of the SLH plaza was converted to a hawker-food centre during lunch time. Thus people congregate at these areas to buy food.

A relationship was found between plaza characteristics and plaza use. Strong positive correlations were found between plaza size and mean use and density of use (Table 4). Large plazas had larger numbers of users with a higher density of

TABLE 2
Correlations between plaza characteristics

Plaza characteristics	Plaza size (sq. m)	Linear metres of seating	Linear metres of seating per 100 sq. m of plaza area	No. of trees	No. of trees per 100 sq. m of plaza area
Sized of Planted Area	0.28	0.89*	0.86	0.83	0.85
No. of Trees per 100 Sq. Metres of Plaza Area	- 0.19	0.98**	0.99**	0.54	
No. of Trees	0.72	0.65	0.54		
Linear Metres of Seating per Sq. Metres of Plaza Area	- 0.19	0.99**			
Linear Metres of Seating	- 0.05				

Pearson Correlation Coefficients (N=5)

** P < 0.01

* P < 0.05

TABLE 3
Mean use and density of use in plazas

Plaza name	Use and density					
	Mean use: from 12.00 to 2.00 p.m. (per day)	Density: people per 100 sq. m of plaza from 12.00 - 2.00 p.m. (per day)	Mean use: from 10 a.m. - 6 p.m. (per day)	Density: people per 100 sq. m of plaza from 10 a.m. - 6 p.m. (per day)	Mean use: before and after lunch (per day)	Density: people per 100 sq. m of plaza before and after lunch (per day)
Petaling Jaya Municipal (PJM)	283.14	3.55	527.14	6.61	244.00	3.06
Dayabumi Complex (DBC)	57.57	1.51	137.14	3.55	79.57	2.04
Central Market (CTM)	112.43	2.65	243.71	5.74	131.28	3.09
Damansara City Centre Complex (DCC)	80.86	1.83	221.86	4.98	141.00	3.15
Shangri-La Hotel (SLH)	0.30	0.02	0.57	0.04	0.27	0.02
Mean	106.86	1.91	226.08	4.18	119.22	2.27
Standard Deviation	106.73	1.32	193.48	2.57	89.31	1.34

TABLE 4
Correlation of plaza use with plaza characteristics

Use and density	Characteristics					
	Plaza size (sq. m)	Linear metres of seating	Linear metres of seating per 100 sq. m of plaza area	No. of trees	No. of trees per 100 sq. m of plaza area	Planted area (sq. m)
Mean Use from 12.00 - 2.00 p.m.	0.97**	- 0.28	- 0.40	0.53	- 0.41	0.09
Mean Use from 10.00 a.m. - 6.00 p.m.	0.99**	- 0.21	- 0.34	0.60	- 0.35	0.13
Density of Use from 12.00 - 2.00 p.m.	0.94*	- 0.10	- 0.24	0.62	- 0.27	0.14
Density of Use from 10.00 a.m. - 6.00 p.m.	0.89*	0.05	- 0.10	0.69	- 0.12	0.20

Pearson Correlation Coefficients (N=5)

** P < 0.01

* P < 0.05

TABLE 5
Correlation of mean use with contextual characteristics

Mean Use	Contextual Characteristics (Number)									
	Dept. Store	Retail Store	Restaurant	Housing	Offices	Banks	Manuf. Facilities	Storage W.House	Parking Garages	Surface Parking
12.00 - 2.00 p.m.	- 0.35	0.20	0.49	- 0.14	- 0.21	0.09	0.92*	- 0.14	- 0.10	0.22
10.00 a.m. - 6.00 p.m.	- 0.38	0.17	0.50	- 0.01	- 0.09	0.19	0.87*	- 0.01	- 0.04	0.26

Pearson Correlation Coefficients (N=5)

** P < 0.01

* P < 0.05

use. A relationship also occurred between number of trees and mean use and density of use. Plazas with more trees are used more. A negative correlation exists between density of trees and use. This might be due to the fact that even though the density of trees increased they did not provide enough shade. These plazas would tend to be used less.

Table 4 also shows that there was a negative relationship between use and seating. Even though linear metres of seating and density of seating

increased, mean use and density of use decreased. This might be because some of the seating is exposed to the hot sun. Nevertheless, a slight positive relationship occurred between density of use and linear metres of seating. This finding suggested that whenever there is available seating, especially in shade, a higher density of people could be found.

A strong positive correlation occurred between plaza use and manufacturing facilities (Table 5). This high level of use is not pertinent to the

TABLE 6
Correlations between contextual characteristics

Contextual Characteristics	Dept. Store	Retail Store	Restaurant	Housing	Offices	Banks	Manuf. Facilities	Store W.House	Parking Garage	Surface Parking
Surface Parking	0.73	0.88*	0.92*	- 0.24	- 0.27	0.79	- 0.10	- 0.24	0.76	1.00
Parking Garage	- 0.85	- 0.93*	- 0.75	0.79	0.81	0.31	0.00	0.79	1.00	
Store or W. House	- 0.48	- 0.56	- 0.31	1.00	0.99**	0.20	- 0.25	1.00		
Manufacturing Facilities	- 0.48	0.03	0.24	- 0.25	- 0.32	- 0.29	1.00			
Banks	0.38	0.41	0.57	0.20	0.21	1.00				
Offices	- 0.49	- 0.62	- 0.39	0.99**	1.00					
Housing	- 0.48	- 0.56	- 0.31	1.00						
Restaurant	0.60	0.91*	1.00							
Retail Store	0.84	1.00								
Dept. Store	1.00									

Pearson Correlation Coefficients (N=5)

** P < 0.01

* P < 0.05

manufacturing facilities but might be due to the usage around the facilities. From observation, the area around the manufacturing facilities was very shady and had some seating. Also, the manufacturing facilities were located near fast-food stores or hawker stalls. This shows that land use in the vicinity of plazas influences plaza use. Very strong correlations were found between offices, stores/warehouses, and housing, indicating a locational proximity (Table 6). Nevertheless, a strong positive correlation was also found to exist between surface parking, retail stores, and restaurants. This suggests that it is necessary for these three land uses to be located close to each other for users' convenience. Conversely, a strong negative correlation occurred between retail stores and parking garages. One possible explanation for this is probably the inconvenience during loading and unloading of goods. People like to park their cars as close as possible to retail stores.

CONCLUSION

Certain plaza characteristics and context plus a cooler environment would encourage people to use plazas. From this study it is reasonable to hypothesize that plazas in Kuala Lumpur and Petaling Jaya located in the vicinity of restaurants and, to a lesser extent, surface parking would have a tendency to receive higher levels of use

than those placed in the vicinity of other land uses. Also it is necessary for the plazas to be near pedestrian activities to ensure use. The study also revealed that size of plaza and good context are necessary in generating use. Since this was a pilot study, the findings are not definitive. More factors such as measurement of population (users and non-users), micro-climate, solar exposure and types of planting should be incorporated in future studies in order to determine the factors for successful plazas in this country.

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REFERENCES

- CHIDISTER, M. 1986. The Effect of Context on the Use of Urban Plazas. *Landscape J.* **5(2)**: 115-127.
- CHIDISTER, M. 1988. Reconsidering the Plaza. *Landscape Architecture* **78(1)**: 40-43.
- FRANCIS, M. 1988. Changing Values for Public Spaces. *Landscape Architecture* **78(1)**: 54-59.
- WHYTE, W. H. 1980. *The Social Life of Small Urban Spaces*. Washington D.C.: The Conservation Foundation.

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