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## User preferences of urban park seating pattern in Hong Kong

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### Abstract

Urban park design is always an interesting area in public design since urban parks play an important role in relaxation and recreation in Hong Kong. The design of seating can be a great support for users' static activities in urban parks. Right now, most of the seating in urban parks are benches which allow a limited number of people to only sit in a line. The user preferences of seating patterns in urban parks were investigated in this study. An interview was conducted in Kowloon Park in Hong Kong and 29 park users were interviewed. Participants were asked to arrange their most preferable seating pattern with a group of 2 to 5 friends in a public park. Results showed that there were various styles of seating patterns: line, partial circle, circle and others. Selection of preferred seating pattern was related to number of group members. For the group with 2 friends, participants chose line style most often. The percentages of line style and partial style decreased when the number of friends increased from 2 to 5 in the group. They chose circle style most for the setting of 3 or more friends. Participants explained that circle style can help them to interact better, use more eye contact and create a shorter distance. This study suggested that circle style, or flexible seating pattern or arrangement might be a better option than fixed line style in the design of urban park seating furniture.

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### 1. Introduction

Urban parks serve as one of most important areas of public space for relaxation and recreation [1]. In Hong Kong, people like to spend their time sitting and having social gatherings with others in public spaces [2]. Park users usually do various activities including exercises and static activities [3]. Researchers have studied the activities of park users using one of urban parks, Kowloon Park, as an example [4]. Kowloon Park is one of the regional comprehensive parks in Hong Kong located in the middle of city. There are a lot of visitors who come from many different districts. There are many facilities in the park such as playgrounds, lakes and gardens. More than 60% of their survey responses show activities such as sitting, relaxing and reading [4]. Such static activities normally need a

seating area with furniture or platform for taking a rest, chatting, eating, reading and playing games. However, design of seating furniture cannot always meet user's needs for these activities and interactions since only benches are provided in most of Hong Kong parks, including Kowloon Park. Although the existing park bench is designed to seat several people, visitors prefer to sit on the ground, leaving the nearby benches empty (Fig. 1).

Previous studies on group seating positions in public places have reported different seating behaviours or strategies based on situation and personality [5,6,7,8,9]. People follow a behavioural pattern when they are selecting a table or seats in a café and a restaurant [5]. In general, seating patterns are related to interaction, communication and leadership [6]. Central seating strategies can improve group interaction and friendship can be enhanced with physical closeness [7]. The interaction patterns of group members can be predicted based on seating position and distance between group members but these are related to task-oriented groups [8]. For a social session, the interaction pattern is more similar to pairing pattern, meaning people want to communicate more to the person next to them [8]. Also, seating positions can give different impressions of subjective perception on personality such as central position being associated to dominance [8,9]. However, very few studies are related to the static activities in urban parks [3,10]. Researchers observed the changes of user seating pattern before and after providing the new furniture in the park and found that people chose more interactive and varied seating patterns [3]. Sufficient seating and movable chairs are observed to be one of the most important factors for a successful park design in USA [10]. The studies showed that park users may prefer various seating patterns depending on the number of people or arranging their own seating. The existing furniture may limit users' choices of seating patterns and therefore reduce people's satisfaction of the park.

From fixed line style bench to movable chairs, these are two extreme design directions. Can we predict user's seating behaviour in the park so that we can design suitable seating furniture for the people of Hong Kong? The objective of this study is to find out user preferences of seating patterns in Hong Kong's urban parks.

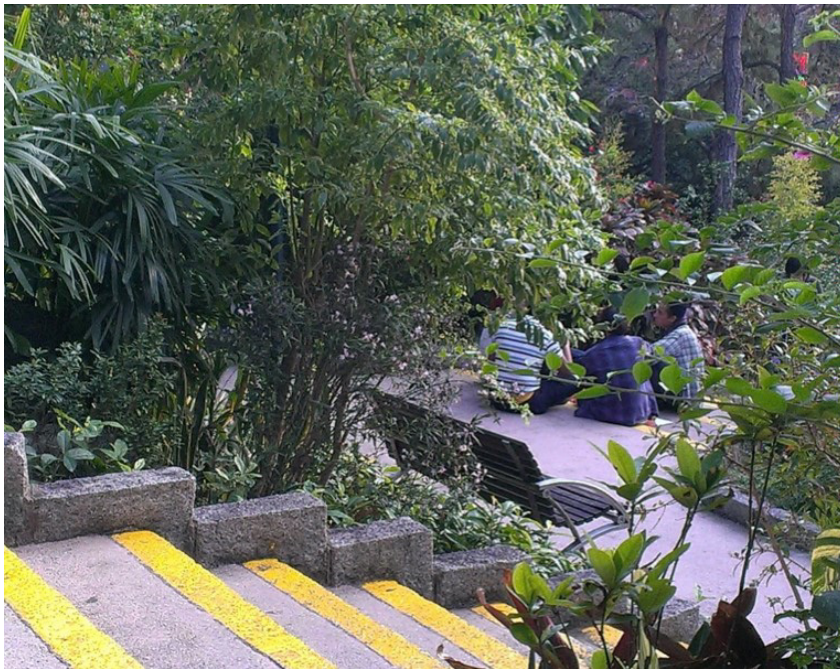


Fig. 1. Users sitting in a park.

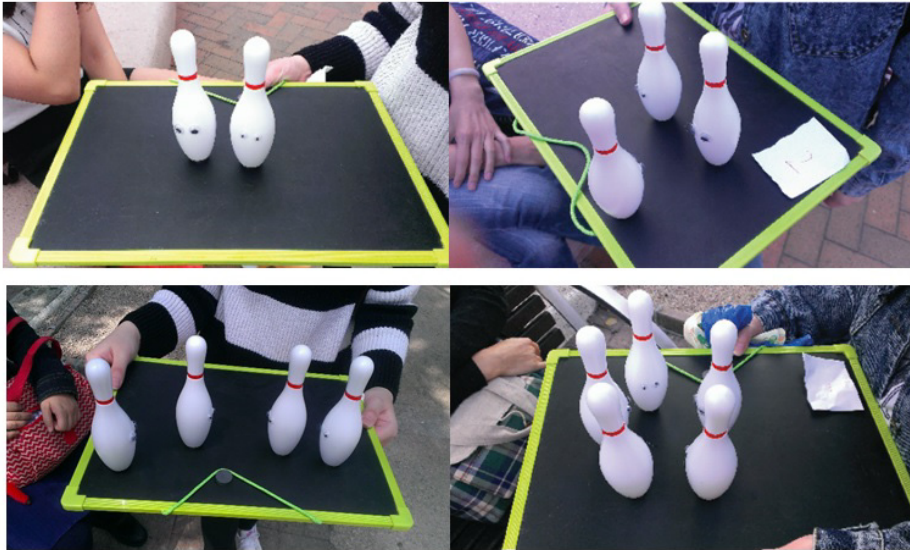


Fig. 2. Examples of seating pattern arrangement by park users.

## 2. Methods

### 2.1. Participants

A face-to-face interview was conducted in Hong Kong's Kowloon Park. There were 29 participants including 7 males and 22 females. They were all Hong Kong Chinese above 18 years old. All participants were seated in the park and chosen at random.

### 2.2. Task and procedure

Participants were instructed to arrange their most preferable pattern of seating with a group of friends in a public park. The numbers of friends were 2, 3, 4 and 5. During the interview, toy bowling pins were used to represent people and eyes on the pins indicated face and eye direction (Fig. 2.). A black magnetic board represented a free space to let people put the pins on top to arrange their ideal seats. There was a magnet below each toy bowling pin so that they could be easily moved and held firmly on the board. The participants could freely arrange their seats by moving the bowling pins to demonstrate the scenarios that how people could sit in parks. The rotation of bowling pins simulated the eye contact between people.

## 3. Results

Results showed that there were several styles of seating patterns which could be classified into four categories: line, partial circle, circle and others. Fig. 3 demonstrates the three most common styles of seating patterns for a group of four people. Line style means all people sit on one line and their eyes look forward. This style supports the limited interaction among people and the distance between the first and the last person is quite far. Partial circle style means all people sit as if they were a part of a circle. In this way, there is more eye contact among people and the distance become shorter. Circle style is when all people form a complete circle. All members can have direct eye contact and it allows for the shortest distance between group members. Moving from line style to circle style allows for the interactions between people to become more natural as the distance becomes closer.

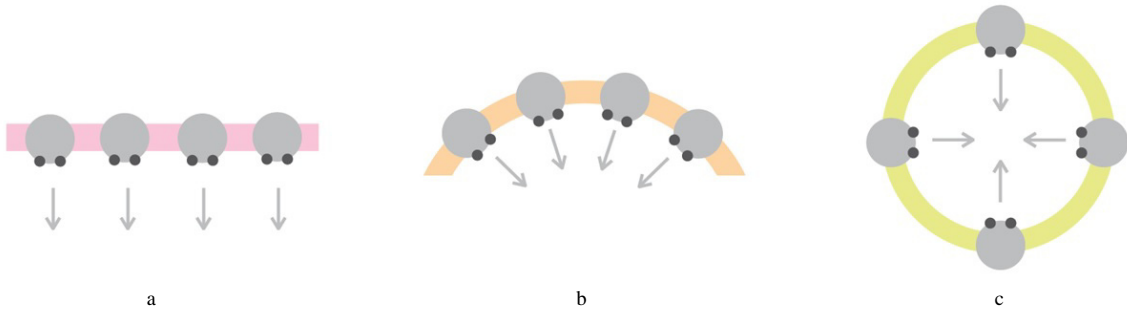


Fig. 3. Three common styles of seating pattern for a group of four people (two black dots and arrow show the eye and face direction). (a) Line style; (b) Partial circle style; (c) Circle style.

Line style was popular when there were two friends sitting together (Fig. 4.). Circle seat arrangement was discovered to be the most favorable seating pattern when there was a group of three to five friends, allowing them to communicate more conveniently. The percentage of line style reduced from 41% to 7% when moving from the 2 person group to the 5 person group. The partial circle style also reduced with an increasing number of people. The percentage of circle seating pattern increased gradually from 28%, 48%, 62%, and finally up to 72% for 2, 3, 4 and 5 person groups respectively. There were some people who always insisted on sitting in the line style because this style allowed them to admire the view of park more easily.

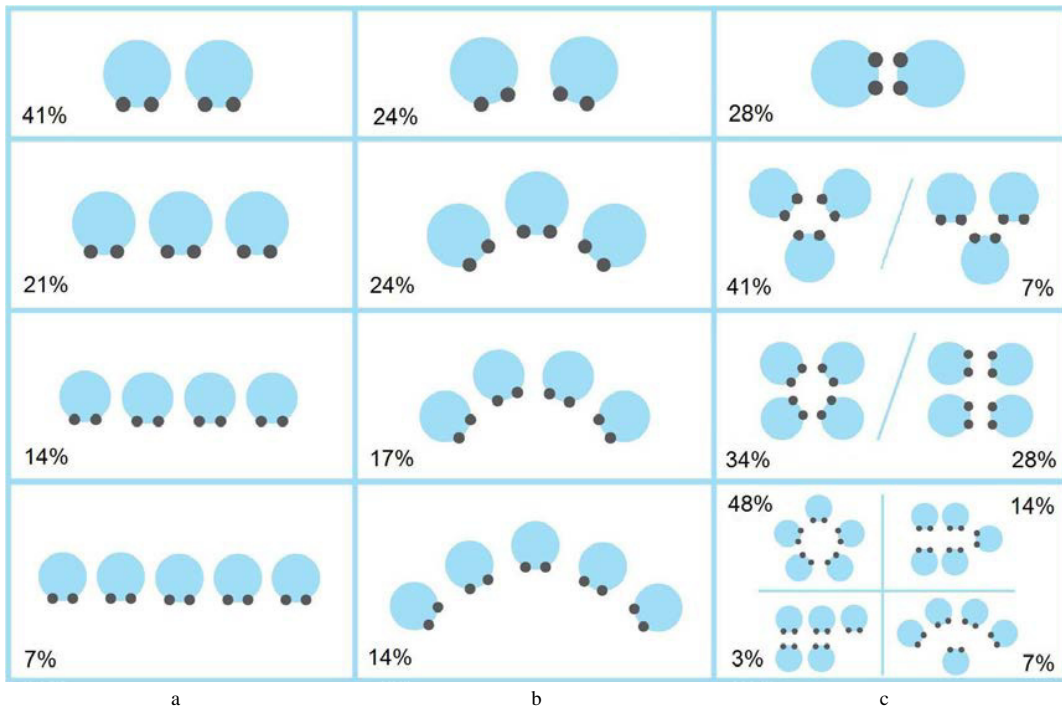


Fig. 4. Percentage and display of preferred seating patterns from all participants. (a) Line style; (b) Partial circle style; (c) Circle style.

For circle style, there were some minor differences. The most common arrangements formed a full round circle but some special arrangements were irregular shapes. These shapes were mixed with line and partial circle style. The circle style had more varieties when the number of people in a group increased. One interesting finding for circle style was that the preferred seating patterns seemed related to whether an odd and even number of people were present. When there was an odd number of people, such as 3 and 5, a higher percentage of participants chose a full round circle (41% for 3 and 48% for 5 people groups). However, when there were 4 people, the percentage of choosing a full round circle was 34%. Some participants liked to put seating patterns as pairs with 2 people (28%) so that they could interact face to face.

#### **4. Discussion**

Urban parks in Hong Kong are essential to the development of society since many social activities are performed in these parks. Urban parks not only give people space to relax and play but also provide chances to communicate with a group of people. One of the factors for the success of urban park design is the seating [10]. Good seating areas can create attachment for users and improve the sustainability of the urban parks. Therefore, user preferences on seating patterns can create significant value in improving the design of the available seating furniture.

The results from the interview demonstrated clear selection of seating patterns. Even though three major styles were identified as line, partial circle and circle styles, there were some other styles. These patterns agreed with the observations from a previous study [3]. More participants chose a full round circle with equal distance when there were 3 or more group members. It seemed that the activities in the park might not need any leadership for most of the participants and they hoped to interact with every member in the group. It was interesting that 28% of participants preferred pair pattern for 2 and 4 members. In a previous study [8], participants also liked to communicate as pair in social settings. However, the percentages for pair pattern were much less for 3 and 5 members. It could be related to the odd number of group members since one member would be alone while others were seated in pairs. Greater numbers of group members should be investigated in the future.

Since the interviews were conducted in Kowloon Park only, users from other urban parks could have different experience and different activities. This might limit the preferred seating patterns. Further study is needed to expand to more urban parks in Hong Kong. In addition, only friends were tested. Seating patterns could be very different if strangers wanted to share the same seating furniture together.

#### **5. Conclusion**

This project studied user preferences of seating patterns in an urban park in Hong Kong through an interview. Participants were required to arrange freely their most preferable seating pattern when they were together with a group of friends in the park. Results showed that there were various styles of seating patterns. Line style, partial circle style and circle style are the three most common patterns. Selection of seating pattern was related to the number of group members. Line style was selected most often for groups of 2 friends while circle style was selected by the majority for 3 or more friends. The preferences of seating patterns indicated that park users needed seats to be a close distance allowing for easier eye contact and better interactions. The full round circle style received higher percentages when comparing to pair pattern and central position strategy. These results gave a better understanding of users' preferences on seating patterns and provide valuable information for urban park design. Circle style or flexible seating arrangement may be a suitable option for seating furniture in Hong Kong instead of the fixed line style bench that is currently employed across urban parks.

#### **Acknowledgements**

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## References

- [1] R.H. Platt, *The humane metropolis: people and nature in the 21st-Century city*, University of Massachusetts Press, Amherst & Boston, USA, 2006.
- [2] K.W.M. Siu, *Urban Renewal and Design: City, Street, Street Furniture*, HKPolyU, Hong Kong, 2007.
- [3] Y.H.B. Lee, L.H.D. Chan, M.X. Tang, *Park seating furniture design in Hong Kong: a case study of inclusive design and its relation to user interaction*. In: *Proceeding of Include Asia 2013*, 2-3 July 2013, Hong Kong.
- [4] K.K. Wong, M. Domroes, *Users' perception of Kowloon Park, Hong Kong: Visiting patterns and scenic aspects*. *Chinese Geographical Science* 14 (3) (2004) 269-275.
- [5] E. Carstensdottir, K. Gudmundsdottir, G. Valgardsson, H. Vilhjalmsón, *Where to Sit? The Study and Implementation of Seat Selection in Public Places*. In: Vilhjalmsón et al. (Eds.): *Proceedings of the 11th International Conference on Intelligent Virtual Agents*, September 15-17, Reykjavik, Iceland. *Lecture Notes in Computer Science*, 2011, 6895:48-54, Springer-Verlag Berlin Heidelberg.
- [6] D.R. Forsyth, *Group dynamics*, Wadsworth, Cengage Learning, CA, USA, 2009.
- [7] J. Greenberg, *The role of seating position in group interaction: A review, with application for group trainers*. *Group & Organization Studies* 1 (3) (1976) 310-327.
- [8] A.P. Hare, R.F. Bales, *Seating position and small group interaction*. *Sociometry* 26(4) (1963) 480-486.
- [9] R.J. Pellegrini, *Some effects of seating position on social perception*. *Psychological reports* 28 (1971) 887-893.
- [10] R.L. Ryan, *The role of place attachment in sustaining urban parks*. In: R.H. Platt (Eds.) *The humane metropolis: people and nature in the 21st-Century city* (2006) 61-74.