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A Study on Efficiency of Open Space Utilization in Private Development

Mr WU Ho Fung, Eric

Master of Housing Management
The University of Hong Kong



HKU — Department of Urban Planning and Design
Mr Wu Ho Fung, Eric (胡浩峰)

1. Introduction

In this thesis, it investigates the efficiency of utilizations of public open space within private development (“POSPD”). Public open space plays an important role for cityscape, as well as provides places for public life for citizen.

The subject efficiency is studied in three dimensions: policy, management and spatial quality. In policy dimension, the policy is systematically illustrated from different government sources and documents, and compared and analyzed in view of overseas experiences; in management dimensions, it identifies the critical aspects in management in legal basis, spaces by-law and rules as well as permission for activities; in space quality dimensions, a quality scoring measure is developed to assess the quality of POSPD. The efficient utilization of POSPD, measured in terms of number of patrons, is analyzed in correlation with such quality scores, in search of the quality scores of high significance to the popularity of POSPD.

The findings revealed that, in policy dimension, POSPD lacks adequate regulations in the space design, construction, operation and modification; in management dimension, the legal basis for private owners to set management rules for POSPD is inadequate; the procedure for activities permission is not clear delineated and the vetting process is not efficient; in quality space dimension, it is found that the below quality criteria are critical to efficient utilization of POSPD: 1) space relation to the surrounding neighborhood; 2) social activities inside spaces; 3) Internal design and external enclosure of the space.

By the above research, certain policy recommendation has been made. A highly efficient utilization of POSPD requires involvement of government, private owners and space builders. First, the POSPD policy shall be further reviewed to provide a framework regulating the space design, operation and enforcement of POSPD; second, builders may focus on certain criteria with high level of significance; third, a clear and efficient guideline vetting procedure for activities/amenities inside POSPD. The above measures are considered to clearly delineate the grey area in procedures and contribute towards a higher quality space provision.

2. Literature Review

In literature review, the schools of thought in traditional architecture and design in open plaza and urban planning theories form the basis of discussion. In particular, Camillo Site (1889), Unwin Raymond in traditional era, Jane Jacobs (1961) and William Whyte (1980) in modern era are reviewed in particular. From an urban planning perspective, from a macro point of view, Jane Jacobs looks from a wider angle from urban planning as a whole. Her discourse based on importance role of streets to flourish the diverse social life in the context in a city.

Successful open spaces are those used by people extensively and influential to social life in the district. Apart from design, accessibility and management, more important is the diverse use of the space and nearby facility support including retails, restaurants, etc.

From a micro view, While William Whyte looks on more detail perspectives of space. From the design and management, successful attributes include seating, visual permeability and comfort of entrance, natural elements such as sun light, fountains, and attractive support of retail facilities. The approach and methodology of above two scholars are important reference of this paper.

From a design point of view, traditional architects mentioned several qualities that form a successful open space. They are artistic beauty (Camillo Sitte, 1889, Unwin Raymond, 1909, Paul Zucker, 1595), location and accessibility (Marcus and Francis, 1990), relation with surrounding (Marcus and Francis, 1990; Jane Jacobs, 1961), socialability (Marcus and Francis, 1990; Jane Jacobs, 1961), natural and artificial elements (Marcus and Francis, 1990; William Whyte, 1980) and retail and food facilities (William Whyte, 1980).

By the above review, it is intended to form assessment criteria for successful open space on the basis of above works of architects and urban planners, and facilitate the discussion in later chapters.

3. Methodology

The research involves three main objectives:

1. to map out the overall conditions of POSPD;
2. to analyze the quality and performance of POSPD;
3. to discuss if the PSOPS is an efficient option for space provision

To achieve the above objective, the research methodology is designed to collect the necessary data for the studies. The research design involves both qualitative and quantitative approach.

In qualitative approach, literature and policy papers concerning both local and overseas POSPD policy and management are reviewed, so as to form a comprehensive picture on policy in this aspect, and analyze its utility in light of overseas experiences. Case study and field research are conducted to collect the data for analysis.

In quantitative approach, the research design aims at collecting demographic and site data for an empirical research. The steps for such research design are as the following:

1. Site data from field study
2. Morphological data from site plans
3. Patronage and spatial data
4. Demographic and property data in the vicinity of the space
5. Assessing different attributes of sample spaces
6. Correlating the data between space attributes, patronage, demography and property data in the vicinity of samples space
7. Observation and reference to established theoretical framework

In connection to above, the study is conducted in three research methods: Morphological Mapping, Patronage Mapping and Grading of Open Space. Site visit is the main method to collection information. In prior to each site visit, locations plans are prepared to map out the morphological setting of each space, including its connectivity

to the surrounding, its surrounding diversity and facilities; At each site visit, the visitors features and open space are mapped out and graded. By these methods, the information required can be collected for further analysis. For ease of reference, the procedures of data collection in listed at below chart:

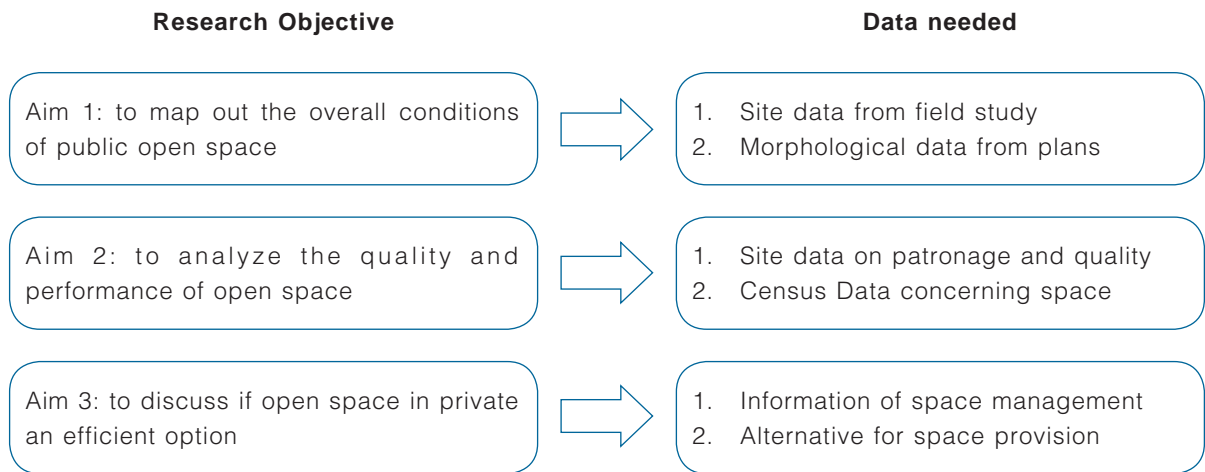


Table 1: Flow chart for aims and data needed for studies

The final grade of each space is adopted to correlate different characteristics of the space. The purpose of correlation analysis is to find out which factors are influential in the utilization of space.

As mentioned in paragraph 3.5.1, the spaces are classified according to the characteristics. These

characteristics are compared with the space grading and patronage details, in search of any correlation between the two. In this analysis, it is aimed to search for the dependent variable affecting the performance of open space by the independent variable, listed as below chart for easy reference.

4. Policy Dimension of Public Open Space within Private Development

In this chapter, the policies for policy open space within private development (“POSPD”) are briefly introduced. It aims to provide a brief picture of provision of public open space within private development through the history of incentive zoning and its particular adoption to local context in policy dimension.

Policy dimension analysis will be divided into 3 parts. First, it reviewed and examined the policy experience of incentive zoning in New York; second, it reviewed and analyzed how the incentive zoning policy has been adopted in the local context in Hong Kong; third, it analyzed the policy shift in provision of public open space within private development since a series of public open space controversy

It was found that POSPD policy in Hong Kong is an adaption from Incentive Zoning Policy originated from New York at the early of last century. It intends to mobilize the space within private development for public use, due to certain constraint that land resource is not sufficient to mobilize for public space purpose, as well as a better integration with existing private development as a planning gain to the public. The developers, after fulfilling relevant administrative vetting procedure, were certified to fulfill planning requirement and enjoyed bonus GFA or concession as a return for its provision of public space.

Incentive Zoning was further tailored in the context of Hong Kong. Instead of giving incentives for developers to provide public space, the administration incorporates its planning requirements for space provision and translated them into lease condition. Only the Areas within Private Properties Dedicated for Public Use” is capable for bonus GFA or permission under Cap 123 (F), Section 22. The space mainly includes buildings setback for street widening and public passage. A restraint over space provision by POSPD after controversy arisen in 2008 and guidelines established in regard of design and management presents a policy shift in its policy.

There is no doubt that POSPD is deemed a critical component of space provision in urban fabrics. POSPD policy in Hong Kong, in reflection of New York experience, however is lack of complete, clear and well delineated procedures.

By comparing the policy between Hong Kong and New York, Hong Kong POSPD policy lacks a clear and adequate policy regulating the space construction, operation, as well as empowering on enforcement. Within POSPD framework it lacks flexible modification arrangement as operating in New York policy. In case of Hong Kong, it generally lacks the procedure for such modification. The result is, the space design and operation cannot keep pace with the change of surrounding and unleash its full functionality and works efficiently accordingly, nor, worse still, remedy the design problems arisen from its space location inseparable from residential block giving rise to privacy and security concern. The inflexibility constrains efficiency of utilization and remedy of latent problem due to space design.

To conclude, in policy dimension, the utilization of POSPD in Hong Kong is not efficient. As the interests of builders and private owners need not be in line with the members of the public, in lack

of effective regulation on several key aspects such as spatial design, construction, operation, modification as well as enforcement, the space cannot fully utilized to suits the recreational needs of citizen. A more concrete policy framework of the above space provision will foster the efficiency utilization.

5. Public Open Space in Management Dimension

In this chapter, efficiency in Public Open Space utilization is analyzed from dimension of management. Following the policy discussion in chapter 4, it aims to study the empirical observation of space operation.

As mentioned in chapter 4, administration implemented the Public Open Space within Private Development Design and Management Guideline, with effective from 14 February 2011. The guideline has covered 3 main aspects of POSPD management: first, contractual obligation to provide space to public and continuous management and maintenance responsibility; second, classification of permissible activities and relevant vetting procedure; third, operation details of POSPD. The empirical observation is conducted with reference to the above aspects mentioned by the guideline.

In this chapter, it aims to review the legal basis for POSPD management, as well as the how its management and uses are affected by different arrangements. It is studied in 4 key dimensions: legal basis and enforcement, by laws and rules, management mode and permission mechanism for activities/ amenities in POSPD, in combination with the experience of New York, which has an experience of privately owned public space of a century by extensive application of Incentive Zoning.

The legal basis for effective POSPD management, which foundation is stipulated expressly in provision of Government Lease/Government Grant, are brief and vague on the delineation of rights and obligation, powers and responsibilities, on both parts of private owners/ managers and public users. Under this ambiguity and vagueness in delineation of rights and obligation, the legal foundation for setting by laws and rules for POSPD by private owners are questionable.

Another dimension into the characteristic of POSPD management is its differentiation of those from POS ran by government. In both spaces, the ordinance Cap 132 BC by government and by-laws and rules by private owners shares the common clauses of “use restriction” for public users in majority of provisions; yet due to the different roles between the two, their execution is substantially different. Certain clauses reflect the owners’ high alertness on legal compliance and management issues.

Permission mechanism is another significant dimension to enhance the POSPD use. It has been more common in New York privately owner public space than in Hong Kong POSPD to have community and commercial activities and amenities. The reasons behind is the lack of a broad legal framework and a series of legal modification actions that support to integrate the vetting procedures of different departments and community boards. This integration is also significant as it makes the application more clear and foreseeable. In the case of Hong Kong, lack of such clear application procedure and vague delineation between public and private realm give rise to grey area for unauthorized commercial amenities. For remedy, despite of the administration effort to delineate the permission procedure, the recently established guideline is inefficient to establish clear and foreseeable permission procedures for such provision. The applications often results

In view of above three dimensions, the legal basis (in case of Government Lease/Grant) is ambiguity and inadequate to empower management of space, and the procedures for activities amenities permission is not clearly defined, leads to inefficient utilizations of public space. Nevertheless, it is argued that in private space private owners and management companies over manage the space and restrict the public use and enjoyment. After the above analysis, it is found that the rules between the government and private sector share similarity in lot of area, and by rules it could not conclude the use and enjoyment are being seriously affected.

6. Public Open Space in Quality Dimension

In this chapter, it intends to map out the utilization of POSPD in space design aspects. It attempts the map out the significant attributes that contributes to successful POSPD.

The POSPD are classified by its use (as residential spaces, shopping arcade spaces, and office spaces), and by its spatial types (as plaza spaces, courtyard spaces, public green spaces, promenade spaces as well as pocket spaces), as the basic analytical unit.

The mapping out study involves the methodology of scoring and correlation analysis. A measure of successful attributes, as summarized by typical schools of thought in this field, contains 6 aspects and 20 criteria. First, each space is measured of its quality score accordingly; second, the scores are measured of its significance in relation to utilization of space, through correlation analysis with its patrons.

After the correlation analysis between the spatial quality and patronage of sampled spaces, it is found that the spatial relation with the surrounding and socialability remain the critical aspect to the space success. While certain spatial attributes this is considered important in traditional architecture shows insignificant correlation in the empirical research.

Case studies on typical open spaces are selected to illustrate the conclusion on the empirical data research. Contrary to the emphasized importance of permeability in traditional school of thought in architecture, this attribute has insignificant to negative correlation in the context of Hong Kong. In case study, it is illustrated that the prevailing by-street pedestrian walkway system — concourse and skyway system — replace the function of street. Most Central Business District and urban area are even impermeable — this once again proves the importance of space relation to the surrounding to its success.

The above empirical research reflects the inadequacy in the established guideline on POSPD. The guideline misses the important dimension of space quality “relation with surrounding”, and though the guideline attempts to promote community/commercial activities inside the space, it ignores the building design that sustains social activities, such as enclosure, centering and linkage and quality of sitting area provision.

7. Discussion and Conclusion

The aim of this thesis is to map out the factors that affect the efficiency utilization of POSPD. The study is conducted in 3 aspects that shape efficient utilization of POSPD: policy, management and quality. The thesis makes reference to “Public Open Space in Private Developments Design and Management Guidelines” (Development Bureau, HKSAR, 2011) as the framework of reference to the study of efficiency of POSPD in Hong Kong.

Generally, it is concluded that currently POSPD in Hong Kong has very large room of improvement for further fostering in efficient utilization. In particular, the major findings have already been covered at the summary of each chapter. In this chapter, upon the basis of the above findings, it attempts to propose recommendation for further enhancing the public open space utilization and future policy making.

With reference to above summary of highly correlated criteria to popular space, strategy to enliven POSPD can be developed for spaces of different spatial types according to their varying correlation.

The low correlation of permeability for space popularity has far reaching implication in the studies of urban environment design. The low significance of permeability for space popularity implies the fading functions of street. Instead, off-street urban fabrics, such as underground system and skyway networks, are taking more significance role. Opposite to the traditional view points, public spaces need not to be built at ground level adjacent to street, but podium-located public space can also be highly utilized.

Instead of permeability, integration of different spatial spaces is a more critical quality: through blocks arcade and pedestrian walkways, pedestrian networks formed by skyways and undergrounds, smooth spatial transition between indoor atrium and outdoor piazza, etc, become more important aspect in space design. This context is especially relevant to POSPD, due to its nature with high integration with private development.

Public space within private development is an adoption of Incentive Zoning Policy from New York. It aims to provide public open space by private owners, with well intention to allow higher flexibility and integration with surrounding development, finally reaping into planning gains for public. Yet seen as extra amenities for public, private open space has its social cost to the public. The extra built floor area results in extra loading on transportation and congestion, higher demand on municipal services, loss of ventilation, sunlight and wind due to high floor height and bulk size (William Whyte, 1988; Kayden, 2000).

Inefficient utilization of POSPD leads to extra social cost. Bonus SC/GFA in exchange for public space (under Building Ordinance Cap 123) may increase the development density of urban fabrics, generating urban environment issues. As per the investigation in this thesis, the utilization of POSPD has further room to improve for its efficiency. An efficient space involves the joint effort of government, private owners as well as builders. In combination, the public may enjoy high quality of space.

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A Study of Environmental Protection Practices in Hong Kong Properties

Mr LAM King Lok, Pius, Ms LEE Chi Ching, Cindy, Mr TSE Shiu Ting, Kerry

Master of Arts in Housing Studies
City University of Hong Kong



CityU — Department of Public and Social Administration (from left)

Mr Lam King Lok, Pius (林敬樂)

Ms Lee Chi Ching, Cindy (李姿靜)

Mr Tse Shiu Ting, Kerry (謝肇廷)

environmental protection to their customers. The main objective of the study is to enhance the popularity of launching environmental protection practices in Hong Kong properties. Factors that influence the willingness of public to perform environmental protection practices and several reasons in relation to the degree of environmental protection attitude of the property owners will be explored in this study.

Although it has been demonstrated that “Environmental Protection” practices generates financial benefits, the respond of public is not satisfactory in Hong Kong. What is the major reason that owners of Hong Kong properties are not interested in “Environmental Protection”? How can the HKSAR Government and property managers in Hong Kong overcome such obstacles and cooperate with the owners to take part in “Environmental Protection”? This study will investigate the relationship between property owners and environmental protection practices.

Introduction

Environmental protection is highly promoted and is an emerging trend in many countries including Hong Kong. It is a significant practice in improving Hong Kong environment and for financial benefits. It is worth for the landlords or property management companies to help promoting

Literature Review

Environmental protection practices can be regarded as a kind of public goods. According to Ostrom et al (1994) and Hindriks and Myles (2006), goods and services can be categorized as Public Goods, Common Pool Resources, Toll/ Club Goods and Private Goods.

Categories of goods and services

Excludability	Subtractability	
	Low	High
Difficult	Public Goods	Common Pool Resources
Easy	Toll/Club Goods	Private Goods

For Samuelson (1954), the consumption of public goods by an individual would not affect the consumption of others and it is not possible to exclude the consuming of such goods by others. Problems of free-riders are created in the production of public goods, known as (Olson 1965). The collective action dilemma phenomenon exists because no one is willing to contribute at an equilibrium level. The provision of public goods is affected by human behaviour involving collective actions.

Collective actions can be further divided into three levels. They are individual, organization and neighborhood and can be studied from social or economic perspectives. At the individual level, people will engage in environmental action to “save the earth” when they have a certain “quality of life” that they are able to engage in sustainable practices (Mark Bhatti & Andrew Dixon, 2003). The ability to alleviate, mitigate or even escape from ecological deterioration is dependent on how much income we have, where we live, which social class we belong to and whether we suffer discrimination in other areas of our lives.

At the organizational level, Ostrom suggested that different actors play different roles and different objectives in the development process (Ostrom, 1986, p. 463). Interdependency between the actors in the process is important. Elias (1971) describes dependency as a fundamental aspect of human interaction and dependency relations, such as Economic, Juridical and Communicative Dependency, between persons as the counteraction of power relations. The dependency and power relations influence the negotiations and in consequence the residential environment. We assume that the residential environment is affected by the amount of money available, the division of this money and the division of the power in the development process (See Goverde, 1987; Dekker et al., 1992; van Damme and Verdaas, 1996).

At the neighborhood level, Jencks & Mayers (1990) Jencks & Mayer (1990) argued that the literature was characterized by three distinct models: ‘epidemic’ or ‘contagion’ model, ‘collective socialisation’, and ‘institutional’ model (Jencks & Mayer, 1990, p. 115). In addition, communitarianism (Etzioni, 2004) is an ideology with strong moral overtones, emphasizing the collective responsibilities of citizens, as opposed to their rights. Hence, rather than imposing fines for social problems such as litter, it is more effective to rely on peer pressure and social disapproval as a discouragement, aiming to reach a point where behavior becomes a self-sustaining personal norm (Halpern & Bates, 2004, p5). This process of responsabilization (Flint, J. 2006) in housing practice has a wider significance, serving to construct new forms of citizenship that may empower some subject transgressive groups to a greater variety of sanctions and disciplinary mechanisms.

Solution to Collective Actions

Allocation of cost and benefit from public/common level to personal/individual level can be treated as a solution to the dilemma. Positive incentives have been created that makes benefit is bigger than cost after cost and benefit allocation.

Besides the production of small group of dedicated and resourceful individual who contribute most the cost of such action according to the critical mass theory (Oliver et al 1985), Incorporated Owners (I.O.) and Owners Committee (O.C.) is an example of the existence of critical mass that can contribute to the collective action. The owners would be benefit more from the collective good in condition with the more heterogeneous the group is. According to Bengtsson, it is a group of agents to make others co-operate by promises of rewards or threats of punishment. (Bengtsson 2001, p.184) People can be motivated by the selective incentives. In order to encourage the public to participate in

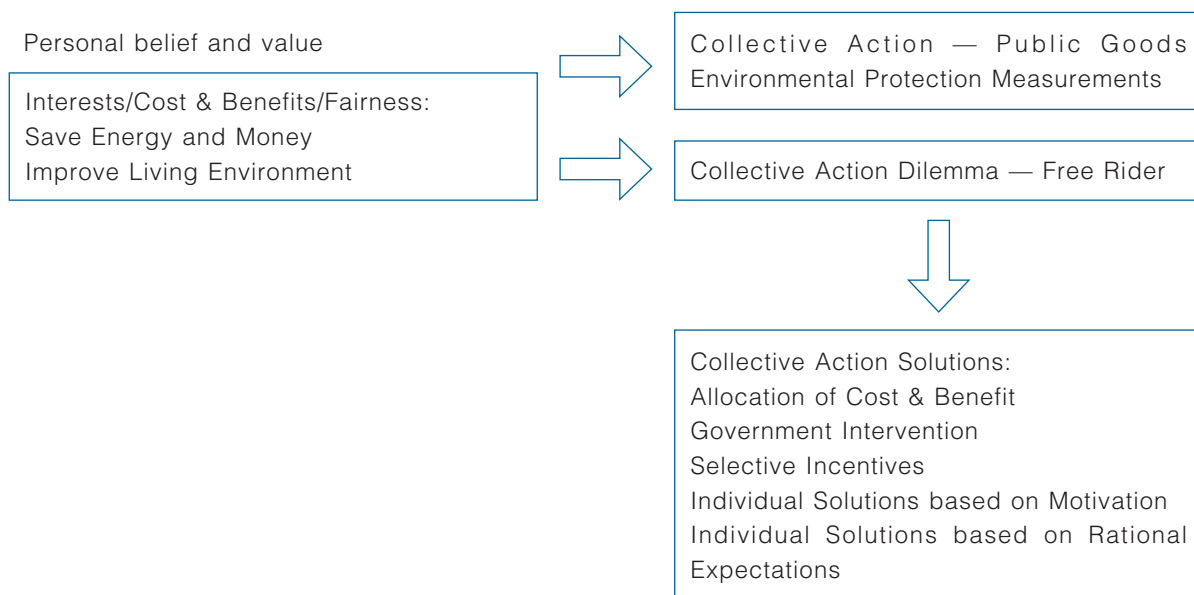
environmental protection schemes, the award or punishment can be implemented by the government. In addition, The solution to collective action would be explained by the theory of changing the simple prisoners' dilemma games to assurance game. As suggested by Bengtsson (1998), people will change the policy to reach stable equilibrium that cooperation will eventually be generated. People hope to get the best payoff by knowing the others will cooperate through the exchange of information.

Conceptual Framework

In this study, public participation is conceptualised as solution to the collective action problem that helps promoting environment protection practices. The reasons, process and solutions can cause impact on motivating people to launch and participate in environmental protection practices.

The analytical framework of this study is illustrated as follows:

Framework of public participation in environmental protection practice



Research Findings, Data Analysis and Discussion

With the aim of observing the comprehensive and complicated reasons and beliefs behind of environmental protection behaviors and practices, hypothesis are tested by setting related questions in in-depth interview and questionnaire survey. The main aim for the in-depth interview and questionnaire survey is to investigate the validity of the categories as listed below to support the conceptual framework and explore any invisible or interesting factors that influence the willingness to performance environmental protection practices.

In-depth interview had been conducted with six interviewees who were playing important roles in their developments. They included the Chairman of I.O. of HOS; the Representatives from the Landlord of shopping centre and commercial building; the I.O. members of private housing estate; the Vice-chairman of I.O. of private single-unit building; and the Representative from the developer. In addition, survey was conducted through sending the questionnaires to the management staff of property management companies from different types of properties in Hong Kong. The response rate was around 70%. Data is analyzed by statistical tool to test the hypothesis.

For the purpose of analyzing the factors that affect the willingness to perform in environmental protection practices. The in-depth interview is mainly divided into the following main categories:

1. Investigation of personal background;
2. Discussions on views regarding environmental protection in Hong Kong;

3. Factors that affect the involvement in environmental protection practices;
4. Intervention by HKSAR Government;
5. Difference between personal perceptions and general views;
6. Outcomes of environmental protection practices within the developments; and
7. Other opinions regarding environmental protection practices.

Data Analysis and Discussion

After conducting both in-depth interview and questionnaire survey, the factors related to the problem can be categorized into the following seven aspects:

1. Demographic factors;
2. Neighborhood relationship;
3. Availability of financial incentives;
4. Sense of ownership;
5. Cost-benefit reallocation;
6. Involvement of the I.O./O.C.; and
7. Provision of information

Demographic Factors

Small families are the main stream in Hong Kong with working couples. Data from the Census and Statistics Department in 2008 show that the average household size was 3.0 and it is predicted to further decrease to 2.7 in 2036. In 2008, one fourth of households had only two members, whereas only 14% of households had five or more members. It is no uncommon to hire domestic helpers to take care of the household, in 2009, around 259,000 foreign domestic helpers had been working in Hong Kong.

Small families with working couples and the existence of large number of domestic helpers hinder the implementation of environmental protection in Hong Kong. When sharing with us the unsatisfactory outcome in pilot scheme of “Separation of Domestic Waste at source”, the Chairman of I.O. of HOS mentioned that “Young couples living here normally go out for work and therefore paying little effort on environmental protection”, he also expressed that “We cannot ensure that the helpers will help the owners to separate the domestic waste”.

It is observed that a busy-working life results in the overlooking of environmental protection. Their sensitive level on environmental protection is very low especially for the groups which normally stay at home i.e. domestic helpers. These all hinder the implementation of environmental protection measures in Hong Kong.

Neighborhood Relationship

Neighborhood relationship can affect the willingness to participate in environmental protection practices in household level. The Vice-chairman of I.O. of private single-unit building mentioned that the close relationship between neighborhood and management staff could enhance the promotion of environmental protection. He thought that the security staff and cleansing staff helped a lot in promoting environmental protection.

In addition, pressure will be increased if the neighborhoods show support to the environmental protection and to push particular developments to perform environmental protection practices. The Chairman of I.O. of HOS said that “Funding schemes related to separation in domestic waste and energy-saving are highly welcomed by residential properties in Hong Kong”. Neighborhood relationship is an important factor to promote environmental protection. Residential buildings are more or less influenced by other developments nearby.

Availability of financial incentives

When discussing the obstacles and hurdles in launching environmental protection practices in Hong Kong, the Representatives from the Landlord of commercial building mentioned that the amount to be invested and the money available are main concerns when decision on the investment proposal related to environmental protection is made.

Financial incentive is a factor that influences the decision on investment related to environmental protection scheme. Subsidies from the government is one good incentive. This acts as an important selective incentive to the solutions to the collective action which helps to reduce the financial burden of citizens. From the interviewees’ point of view, positive incentive is a good catalyst for promoting environmental protection in Hong Kong.

Sense of Ownership

Owners are more likely to perform environmental protection practices than tenants as no direct benefits for tenants to perform such practices. While exploring the obstacles and hurdles in launching environmental protection practices in Hong Kong, the Representatives from the Landlord of commercial building mentioned that “Most of the tenants mainly concentrate on their own business”. The Chairman of I.O. of HOS also shared similar point of view. Tenants concern more on the rent level and its own business while speculators focus more on the value of the developments. As a result, people do not have incentive to produce public goods as the non-excludability of the goods makes the marginal cost of production zero and non-excludability makes the supplier goods difficult to compensate the cost of production. Hence, free rider problem created as mentioned in the literature review.

Cost-Benefit Reallocation

Cost-Benefit reallocation is a major factor that alters the overall performance of environmental protection in Hong Kong. Incentives are typically used in shifting costs or benefits to the citizens. Most of the interviewees shared same point of view regarding this issue. The best evidence can be shown by the Chairman of I.O. of HOS. He expressed that “Environmental protection activities were very successful and welcomed by residents if material incentives like souvenirs would be

provided”. He argued that “Shifting of cost to the citizens can result in a more immediately effect on environmental protection measures, instead of education and promotion”, and “The most effective way to promote environmental protection practices is to shift the cost of performing it to the citizens, and through the means of legislation”. The Representatives from the Landlord of commercial building also pointed out that “Many Hong Kong people are increasing their awareness in the environmental protection. Yet, very few of them are taking actions in joining the environmental protection practices until the government imposing tax on them”.

Selective incentives can motivate the public to participate in environmental protection. Incentives can be divided into positive and negative incentives, and in the forms of monetary or non-monetary. Positive incentives for launching the environmental protection practices usually refer to subsidies, funding and achievements like positive reputation or image and brand name gained by the parties. Negative incentives normally refer to the taxation or charges that sufficed. Most of the interviewees admitted that negative incentives can cause immediately effect on environmental protection when discussing the issue of levy on plastic bags. People will comply the regulations once money is involved.

It is no doubt that monetary incentives can enhance the willingness of environmental protection practices. Yet, it should be noted that some parties focus more on non-monetary incentives than monetary incentives when making decisions related to environmental protection practices. Companies concern more on the brand name, reputation, image, and achievement more than cost saving. The Representatives from the Landlord of commercial building shared similar point of view by stated that “In competitive business environmental, most of the companies would like to take the social responsibility to increase the reputation and competitive power in the market”. It shows that non-monetary incentives are more important for parties like developers, landlords and I.O./O.C..

More than 80% and 90% of the respondents in our survey believed that both positive and negative incentives are effective in increasing the awareness and participation on environmental protection. Yet special parties like developers, landlords and I.O./O.C. concerned more on the non-monetary incentives. For instance, for developers and landlords, better reputation means more income for their companies or developments which are much greater than the saving from environmental protection practices. For I.O./O.C., better reputation and achievements bring immediate admiration, and sometimes also contribute in extending their career in the local political arena. In order to promote environmental protection, the HKSAR Government should learn from the results and analysis above, better utilize the subsidization schemes, awarding schemes and taxation plans to improve the involvement level in environmental protection of Hong Kong citizens.

Involvement of the I.O./O.C.

I.O./O.C. is an example of the existence of critical mass that can contribute to the collection action. The higher involvement of I.O./O.C. usually results in better performance in environmental protection. IO/OC usually acts as leader and pioneer in making collective decisions and implementing new arrangements within the developments they represent.

From the results obtained in the interview, I.O./O.C. with high involvement in environmental protection normally have better understanding in environmental protection, come across more information regarding environmental protection, more willing to join environmental protection activities and subsidization schemes, holding more environmental protection related activities and hence resulting in better performance in environmental protection.

It is observed from our survey that I.O./O.C. were also more active in initiating environmental protection programs. Although almost 70% of I.O./O.C. supported the implementation of environmental protection practices, only around 35% of I.O./O.C. put the environmental protection issues into I.O./O.C. regular meeting, and around 7% of property set up environmental concern group. The result shows that the enforcement of involving the environmental protection issues in the I.O./O.C. meeting can enhance the implementation of environmental protection measures of Hong Kong.

Provision of Information

Although in quantitative terms, information and education provided by the HKSAR Government regarding environmental protection are perceived to be enough, much more effort should be kept for long term commitment. The Vice-chairman of I.O. of private single-unit building mentioned that “Sometimes posters issued by the government were received, and the topics of these posters mainly focus on encouraging recycling, beware of noise nuisance and keep the environment clean, etc. It makes me feel that the effort paid by the government is not enough”. Both of the participation level in the environmental protection programs of residents and the number of environmental protection programs implemented and residents’ or tenants’ awareness toward environmental protection news/notices are positively dependent on each other.

Summary for Findings

After conducting the research, we discovered that the mentioned seven factors can affect the willingness of performing environmental protection practices in Hong Kong.

The busy lifestyle in Hong Kong discourage the sense of environmental protection, and in-result the sparse of the neighborhood relationship which further depress their enthusiasm of carrying out environmental protection measures. Moreover, the availability of financial incentive is a realistic fact in the study, and the sense of ownership also has significant impact. Cost-benefit reallocation is one of the main factors that motivate or demotivate environmental protection behavior. As a result,

the involvement of the I.O./O.C. and management company seems to be very important as they have the rights and responsibilities to organize and implement the said measures. Last but not least, the provision of information takes an important role in the enhancement of environmental protection measures.

Recommendations and Conclusion

The result of this research reflects that there are seven factors that can affect the willingness of performing environmental protection practices in Hong Kong. Some factors has been mentioned in the previous part of literature review and matched with the conceptual framework. HKSAR Government, landlords, property management companies and I.O./O.C. can play a crucial role in promoting and implementing environmental protection.

According to the critical mass theory (Oliver et al 1985), the production of small group of dedicated and resourceful individual who contribute most the cost of such action. I.O./O.C. is an example of the existence of critical mass that can contribute to the collective action. The findings of survey reflected that higher involvement of I.O./O.C. results in better performance in environmental protection.

Raising public awareness is the first and basic step in promoting environmental protection. Selective incentive is one important means in pushing the public to take action. Both positive and negative incentives should be considered. Subsidy as a kind of positive incentives can be offered to the public to reduce their financial burden though more promotion would surely help. For

the property management companies, positive incentive e.g. providing free gifts to the residents or tenants who joined the recycling programmes is one of the common practices in Hong Kong.

Apart from monetary or tangible incentives, non-monetary and intangible incentives, such as the enhancement of brand name and reputation can also be employed as positive incentive that most of the property management companies highly concerned. Our survey findings suggest that pressure from peers will reinforce community support to environmental protection. Property management companies, which concern for their image and competitiveness, may be more motivated in joining environmental programmes.

In addition, the majority of the survey respondents agreed that taxation is one of the effective methods to motivate the public to participate in environmental protection. The government should consider negative incentives like tax on high power consumption in order to encourage people saving electricity. Government intervention is one method in solving collective action problem.

As most developed countries are paying more attention and initiate prompt action in environmental protections in recent years. Hong Kong should not be lagging behind. The environmental protection performance in Hong Kong properties could be further enhanced by more cooperation efforts of the Government, landlords, property management companies, residents and owners' organizations.

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