



BEST DISSERTATION

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## A Study on Implementing Green Measures in Shopping Mall in Hong Kong



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### Introduction

This is a generation of green evolution. The global awareness of environmental protection has been increasing that environmental protection is everybody's business and the private sector started to input environmental friendly elements to their business models. Shopping mall, a major component of Hong Kong's urban environment and a social venue for Hong Kong citizens, has been long criticized for increasing the environmental burden.

Yet, some shopping malls have already taken initiatives to act green. From placing recycle bins in the mall to installation of food waste decomposers, shopping malls can contribute to environmental sustainability through adopting different green measures in their operation and management.

The goals of this study are to examine how and why Hong Kong's shopping malls implement green measures. It also evaluates the role of shopping malls in Hong Kong's environmental sustainable development, as well as explores the possibility of shopping malls towards better green management and social responsibility on environmental sustainability.

In order to achieve the goals of the study, the following objectives would be attained in sequence:

- To conduct literature review on the fundamental concept of environmental sustainability, green building and shopping mall;
- To examine the development footprint on green shopping mall management in Hong Kong and worldwide;
- To access and identify current green measures implemented by shopping malls in Hong Kong and the rationale behind the management's decision;
- To evaluate the impact of shopping malls' green measures on Hong Kong's environmental sustainable development;
- To suggest ways and give insights on achieving better green shopping mall management as well as better synergy on improving environmental sustainability of Hong Kong.

This study focuses on the green measures implemented by shopping mall management in Hong Kong, and the corresponding impacts to Hong Kong's development on environmental sustainability. Instead of focusing on green

construction, the focus of the study is addressed to examining the management teams' effort on managing, operating and improving existing malls.

## Literature Review

### **Prolonged and Increasing Concerns on Environmental Sustainability**

Starting from the 1980s, the debate and discussion for "sustainable development" have never been stopped. In 1987, the "Our Common Future" (the Brundtland Report) by the United Nation's World Commission on Environment and Development (WCED) (1987, P.49) gave the ever first definition of sustainable development: "Sustainable development is development that meets the needs of the present without compromising that ability of future generations to meet their own needs." Three key elements are involved in the ideology, namely "Environment", "Economy" and "Social", and they have interrelationship that no one can be omitted for a complete sustainable development (WCED, 1987).

The Brundtland Report affirmed environmental sustainability as a key element to the world's sustainable development. Another remarkable milestone to environmental sustainability is the Kyoto Protocol adopted in December 1997 and entered into force in February 2005. The first commitment period of the treaty ended in 2012 and the second commitment period began in 2012, known as the Doha Amendment (United Nations, 2015).

### **Green Building**

Buildings play an inevitable role on increasing the environment's burden that they contribute for nearly 25% of the world's carbon dioxide emission and are the larger contributor to climate change (Levine et al., 2007). With worldwide scholars all put an eye on the huge environmental impact of buildings, calls for green building has risen since the 1980s (Yu et al., 2012).

According to the California's Department of Resources Recycling and Recovery (2014), a green building, or a sustainable building, is a structure that is "designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity;

using energy, water, and other resources more efficiently; and reducing the overall impact to the environment." Adopting another explanation by Yudelso (2008, P.13), a green building is "a high-performance property that considers and reduces its impact on the environment and human health". To summarize, there is no straightforward definition of green building. Instead, the builder and operator of green building must consider environmental sustainability in their every act.

There are different schemes to recognize green building. Leadership in Energy and Environmental Design (LEED) by the US Green Building Council (USGBC) is the most popular one around the globe. Yet, many countries develop their own schemes to suit green building recognition in a more local level, for example, the Hong Kong Building Environmental Assessment Method (BEAM) introduced by the Hong Kong Green Building Council (HKGBC).

### **Shopping Mall**

Nowadays, shopping mall exists in many cities with various cultures and politics that it is a part of people's daily lives (Dawson, 1983, P.1). There are various definitions of shopping mall, yet the one by The International Council of Shopping Centres (ICSC) has been widely adopted by scholars: Shopping centre is "a group of retail and other commercial establishments that is planned, developed, owned and managed as a single property" (2014).

Shopping malls can be classified by different ways according to their tenant mixes, anchor tenants and catchment areas. With development of the mall industry, different classification methods are adopted by scholars and industry. The three commonest classifications are that by Dawson (1983), Urban Land Institute (Beyard and O'Mara, 1999) and ICSC (2014).

### **Shopping Mall Management and Environmental Sustainability**

In 1980s, while green building has gradually become an important topic among the global building industry due to the large impact of buildings to the environment (Yu et al., 2012; Heinzle et al., 2013), the property management industry has also followed the trend by embracing green measures in their management (Sheng et al., 2011). Yet most of the response came from the



commercial office building as well as residential sectors. Shopping centres have been long criticized for their environmental impact (Sardinha et al., 2011, P.1486). In 2000s, it is noticed that worldwide shopping mall management started to apply green concepts in their business model (for examples, Altoon, 2003; Mirel, 2006; Hudgins, 2008).

### Green Shopping Mall in Hong Kong

Hong Kong's shopping mall management industry is becoming more sophisticated and professionalized with the ever changing customer preferences and the growing competitiveness (Chan and Kwan, 2006, P.109). Responding to global green waves from the building industry as well as customers, taking part in the green revolution has also become a major challenge of shopping mall managers.

Currently in Hong Kong, there are 89 and 253 certified projects in LEED and BEAM (including old and new schemes) (USGBS, 2014; BEAM Society, 2014). Among these projects, office building is the majority, with only several shopping malls get these certifications. On the contrary, shopping mall management is more eager to participate in awards focusing on green operation and management — such as the Green Building Awards and the Hong Kong Awards for Environmental Excellence (HKAEE) — that these two awards are now the main battle field of the industry.

Yet, in view of Hong Kong shopping mall industry, professionals from the field have gone much far away from the academic side. Reviewing of the latter, there is scarce academic studies on the concept of green shopping mall management, and also the implications of it to the community's environmental sustainable development. Meanwhile, there is few public recognition and direction which shopping malls can follow as a completed green shopping mall management framework.

### Methodology

Green measures implemented by different shopping malls are accessed and examined through case studies. All measures and practices by shopping malls which contribute to environmental sustainability are regarded as green measures. In the studies, the assessment criteria

of HKAEE are adopted as assessment areas for better comparison, including green leadership, programme and performance and partner synergy (HKAEE, 2015).

Four shopping malls are selected for case study based on their achievement in green recognition, management company, type, size and location. Both qualitative and quantitative data collection method are adopted for each case study, including in-depth interview with shopping mall managers and survey with both shoppers and tenants.

### Analysis and Discussions

#### Green Effort of Shopping Malls

In the study, green measures of four selected shopping malls are examined to evaluate their green achievements. Some good practices of shopping malls are then identified and chosen for further discussion below.

For green leadership, it is good to set up an environmental management system to provide guidelines and directions to management staff to identify and monitor green issues. Meanwhile, the green committee should comprise all functional departments in the management team instead of involving only managers and officers. Lastly, it is good to develop a green working culture through indirect means such as horticultural workshop, green lunch and green party. Such practice not only helps in promoting staff's green awareness, but also increases employees' loyalty to the company.

Talking about programme and performance, it is hard to mark a must-do checklist for green measures as different mall has their own structure and operation pattern. Yet, it is believed that the management has to keep on bettering their performance standard so as to reach the fast-moving development of the industry. Through participating in public sharing sessions, industry seminars and expositions, valuable experience and latest technology can be learnt. Furthermore, every staff's engagement to green measures is integral to make huge contribution to the whole building, and thus a good working culture is critical.

To achieve better partner synergy, it is a win-win practice for malls to cooperate with non-profit organizations. Non-profit organizations would benefit by enjoying huge customer group

and easy-to-reach location by shopping malls; while for malls, such cooperation can make the measures to be more authentic, as well as to improve malls' image. Next, managers should have tailor-made measures to fit own major customer group. In order to maximize the performance of green effort, characteristics of stakeholders should be considered before implementation of green measures.

### Reasons to Act Green

First of all, some green measures are a useful tool to cost saving, such as adoption of high-efficiency lightings. These measures are widely adopted as they can contribute to saving of operation cost of shopping mall (Altoon, 2003; Mirel, 2006; Yudelton, 2007; Hudgins, 2008).

Second, some management use green measures to differentiate from competitors through branding themselves as green shopping malls. In shopping malls not advertise on green marketing positioning, green measures can still help in improving their marketing branding and thus increase customers' loyalty. This has been previously proved by scholars such as Mirel (2006) and Hudgins (2008).

Corporate social responsibility is another reason for management to act green. There is increasing demand on companies' corporate social responsibility achievement in the globe that it is not surprising that large developers do more on environmental sustainability development so as to fit stakeholders' needs, as mentioned and proved by Yudelton (2007) and Hudgins (2008).

Next, internal competition is identified as one of the reasons for malls to go green. In order to stand out among the long list of portfolio within company, some malls are actively participating in various certifications and reorganizations including those related to green development.

Last but not least, it is found that some shopping malls get more resources to implement green practices among company's portfolio. For large-scaled shopping malls, it is normal that more resources and investment can be allocated. However, small-scaled shopping malls can rarely get resources for green measure implementation despite they are managed by large property management company.

### Impacts of Shopping Malls' Green Measures to Hong Kong's Environmental Sustainability Development

Firstly, it is surely that shopping malls' green measures bring direct and tangible contribution to our environment in different aspects, such as resources saving, waste reduction and better indoor air quality. With the industry's vigorous competition, shopping mall management is keen on implementing new green measures and finding new ways to achieve better environment.

There are indirect impacts to different stakeholders as well and will be discussed in the following paragraphs.

For the general public, it is discovered that the general public is not quite aware of shopping malls' green measures and positioning that they do not have much knowledge on the issue. They do not even remember or participate in some activities. Only promotional and basic waste reduction activities are recognized. No interviewee showed recognition on malls' measures on criteria like energy saving and indoor air quality (which are not easy to observe by walking around), reflecting the fact that there is few channel for the public to get information on malls' green performance. Robinson (2007) mentioned that customers of shopping malls do not shun shopping malls just because they are not green. Shoppers do not consider green measures as a factor when they choose to visit a shopping mall. In such connection, it seems shopping mall managers do not have strong motivation to go green in terms of satisfying customers' need.

Yet, it is found that the general public has some knowledge of green shopping mall. Also, people do appreciate malls' green measures as a value-added point to Hong Kong's green development according to the survey findings. In such connections, despite shopping malls' influence to the general public is not that significant nowadays, it is believed that people's awareness can be raised if more effort is paid by mall management to promote green to the public.

For tenants, although tenants may not value malls' green measures in their leasing and planning stage, those measures are still beneficial to the shop in long-term operation and development according to the survey. With more commercial companies engage to the green evolution in recent

years, it is believed that this will eventually foster an atmosphere of chasing green in the business model of different commercial tenants in the future.

There is indirect impact to the Government as well. Shopping malls which take the initiative to act green definitely help the Government in several ways. Green measures by shopping malls can help the Government in raising the public's awareness on environmental protection. Meanwhile, shopping malls can also serve as a pioneer to new green regulations through self-initiated measures or cooperation with the Government.

Furthermore, shopping mall managements are enthusiastic to cooperate with different green organizations. Such cooperation is a win-win project to both parties as shopping mall would gain better recognition through the cooperation, and green organizations would get larger publicity with malls' large customer base. This is helpful to the green campaign itself to get larger response rate as well.

Lastly, there is impact to the industry as mall participation in green can catalyze the industry's development in chasing green. Green certifications, awards, recognitions and competitions in the industry can help in promoting green practices at other shopping malls and contribute to the industry's mutual growth in environmental sustainability development.

## Recommendations

### To Shopping Mall Managers

Reviewing the research findings, it is proved that most of the people would not relate environmental sustainability to shopping mall, so as to the shopping mall management industry. Similarly, staff of shopping mall may have little awareness on mall's green measures since they do not treat acting green as a traditional duty. It is suggested that top management's commitment to green development is essential to promote green measures within shopping mall. With forceful commitment from the senior levels, staff would be aware of their green duties and get used to a greener working habit and working culture. Scholars have also proved that commitment from top management would bring positive impact on corporate green development (Lee and Ball, 2003; Tung et al., 2014).

Next, it is recommended that shopping malls, especially those already putting large effort on green measures, to disclose its own green achievement and effort to the public so to maximize the impact of the green measures they implemented. Without disclosing own green works to the public, the public can merely know how shopping mall performs in green development, thus hardly to consider the mall as a green one. This is not good to the mall itself in terms of marketing branding and work effectiveness. Also, such practice cannot help in raising the public's green awareness.

Thirdly, it is suggested shopping mall management to consider green measures as one of their selling and bargaining point when they carry out lease negotiation with tenants, since there is increasing number of international retailers who care for environmental sustainability (Hudgins, 2008). Meanwhile, malls should collaborate with tenants in the early planning stage to make future operation smoother. Having such integration will smoothen coming green measures and operation of both parties, and that is the key to achieve better sustainability in shopping malls (Hudgins, 2008).

### To The Shopping Mall Management Industry

Looking at the industry in Hong Kong, there is few guideline and resources for shopping mall manager to follow, except the "Hong Kong Green Shop Guide" published by the HKGBC in 2013. The researcher suggests the industry, especially industry council and organization, to provide practical guideline so as to support shopping mall managers to walk smoother and quicker in their journey of green achievement. Such guideline can also help in encouraging more shopping mall managers to start their green journey.

Also, company is recommended to set up tutor scheme within the organization in order to facilitate green development in the whole organization, so that malls with smaller scale and less resources can be benefited from pioneers in the same company. Tutor's experience is helpful to shopping mall manager in terms of research and development cost. Such saving in the investment cost encourages small-scale shopping mall to adopt green measures since cost is always the major obstacle for them to act green.

### To The Government

Serving as a large gathering venue of retail, catering and entertainment industry, shopping mall can help the Government in green policy implementation. In view of the Government's coming policy and regulation planning, shopping mall's participation and support would definitely be beneficial to the Government that the latter should consider to have more discussion with the industry to achieve better implementation of coming environmental-related policies.

### Conclusion

The concepts of green building and sustainable development are not new to the property management industry for long. Yet, while there are increasing voice of promoting environmental sustainability in residential estates and office buildings, there is little correlation between the terms "environmental sustainability" and "shopping mall" in the general public's mind (Robinson, 2007; Sardinha et al., 2011).

It cannot be denied that shopping malls consume large amount of resources and at the same time generate more waste than other types of building structure due to its commercial operation model and mega building structure. Nevertheless, some shopping mall managers in the industry have already taken part in the green evolution. The reasons behind the act include cost saving, fulfilling corporate social responsibility requirement, improving mall marketing branding, differentiating from internal competitors and company's investment allocation strategy.

Shopping malls engaging into green achievement definitely contribute in Hong Kong's development on environmental sustainability in terms of both direct and indirect means. Direct impacts of shopping malls' green measures include environmental protection actions such as resources saving, waste reduction and environment improvement, while indirect impacts include green promotion and encouragement to stakeholders (the general public, tenants, green organizations, the Government and the shopping mall management industry) to achieve mutual synergy in Hong Kong's environmental sustainability development.

This is sadly that the researcher finds that in spite of numerous green measures implemented by some shopping malls, the management is hardly credited by stakeholders, especially the general public. This may due to the lack of promotions and disclosure of information to stakeholders, as well as poor awareness and concern of stakeholders on the issue. In such, green achievement of shopping malls is only recognized within the industry itself and the indirect impact of green measures (influence to other stakeholders) cannot be maximized. This is surely not a good phenomenon to both the industry and Hong Kong's environmental sustainability development as this could hardly create a green culture in Hong Kong.

To tackle this phenomenon, it is recommended malls to involve top management's commitment in green measures, to disclose more information on green effort and achievement to the public, and lastly, to get tenants involved in green measures in the early stage of tenancy for a better integration of green measures of the two parties. Meanwhile, the industry should provide practical guide to assist mall managers in starting their green work, and to set up a tutor scheme within one's company in order to guide the late comers. Finally, the Government should consider having more collaboration and discussion with the industry in future green policy implementation.

To conclude, the green battle is a war of attrition that only long term engagement and effort can bring to final success. Shopping mall managers should always be open-minded and stay eager to step forward towards better environmental sustainability; and at the same time overcome the obstacles on the road of chasing green together with all stakeholders.

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## Service Quality & Customer Satisfaction: A Study of Different Security Service Modes in Private Residential Estates in Hong Kong



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### Introduction

Ascertaining customer satisfaction is a key to success for property management companies. Recent research on both customer satisfaction and service quality has placed a great deal of emphasis on customer expectations and performance perceptions. It is a general consensus that customer satisfaction is achieved only when performance perceptions meet or even exceed customer expectations.

In Hong Kong, the predominant high-rise and high-density nature of residential developments has led to the emergence of specialized services in property management. Security service, being one of the major aspects of property management, also receives more attention due to the rising degree of 'gatedness' of the new residential developments. There are two main streams for the service provision

nowadays, namely direct labour and outsourcing. Direct labour refers to the direct employment of security staff by a property management company whereas outsourcing refers to the arrangement in which a property management company hires either a subcontractor that is its own subsidiary (hereafter referred as 'subsidiary contractor') or a third-party subcontractor (hereafter referred as 'third-party contractor').

This study aims to explore the determinants of customer satisfaction in the context of security service provision and to explore the differences in resident expectations, perceived service quality and overall resident satisfaction across different security employment modes. By investigating three medium-market residential estates in Hong Kong, this study is designed to achieve the following objectives:

1. To test the validity of the defined service attributes for the assessment of resident satisfaction in the context of security service;
2. To examine the relationship between residents' expectations, perceptions and resident satisfaction under different security employment modes;

3. To examine the degree to which resident satisfaction is related to expectancy-perception disconfirmation among different security modes; and
4. To examine the degree to which residents' behaviour can be affected by resident satisfaction.

By establishing and defining the essential attributes for the assessment of resident satisfaction levels about security services, this study offers housing practitioners valuable insights into the re-evaluation of the security services from a different perspective and areas in which further service enhancement would be required to attain resident satisfaction.

## Literature Review

### Service Quality and Customer Satisfaction

Numerous scholars have defined the term 'service'. Lovelock et al. (1996) and Zeithaml and Bitner (1996) regarded service as tangible, perishable and simultaneous, heterogeneous with significant customer involvement in service transactions. In the context of service industry, service quality or perceived performance has been considered as one of the primary determinants of customer satisfaction (Parasuraman et al., 1988; Zeithaml et al., 1996). It is commonly accepted that the factors of customer expectations, perceived performance and disconfirmation of service are predictors of customer satisfaction.

The literature has identified a number of key transaction-specific theories which are built upon different classic models of customer satisfaction. Two main categories of key elements have been mentioned in these theories or models. Expectations, perceived performance, disconfirmation, and equity serve to be the determinants which exert direct influences on customer satisfaction while word of mouth, complaints and loyalty serve as the consequences which are direct customer responses in case of satisfaction (or dissatisfaction).

Similar to other types of service, security service is intangible, heterogeneous and simultaneous and with a high degree of customer interaction. To compare the three employment modes with regard to resident satisfaction, a cumulative customer satisfaction index model is adopted for objective measurement in the research.

### Research Model

Building upon the existing customer satisfaction literature of expectancy-disconfirmation paradigm (Oliver, 1977), customer satisfaction is measured by the difference between expectation and perception. For the purpose of this study, customer expectations refer to the residents' expectations about the quality of security services and perceptions refer to the level of service quality perceived by the residents.

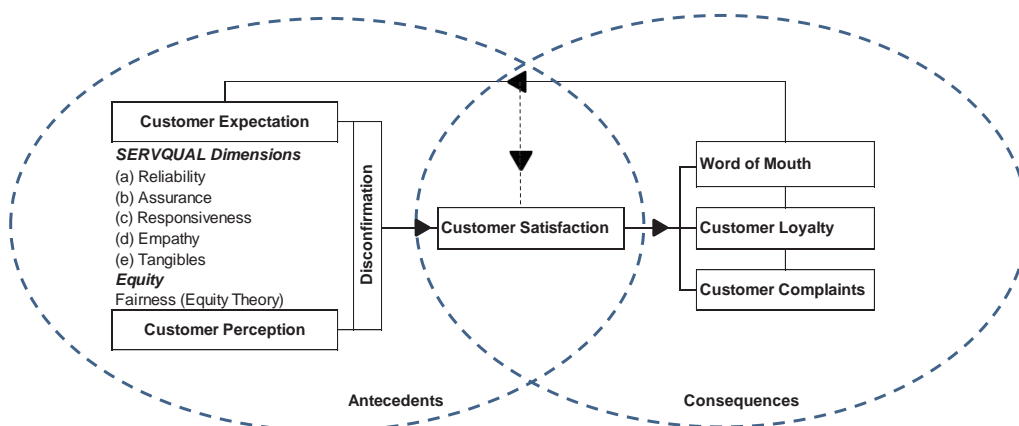


Figure 1 — Research Model of Customer Satisfaction

Figure 1 shows the research model of this study on customer study. For the evaluation of security service quality, SERVQUAL model and equity theory are applied. With the six attributes identified, customer expectations and perceptions are measured.

On the side of consequences, customer satisfaction is assumed to be reflected in the behavioural intention of customers. Based on the exit-voice theory (Hirschman, 1978), it is assumed that higher customer satisfaction would lead to the consequences of positive word of mouth, higher customer loyalty and fewer customer complaints. Word of mouth is about informal communications between users and can either be positive or negative, as a result of satisfying or dissatisfying experiences. Customer complaints are usually taken as a measure of level of residents' satisfaction. Fewer complaints generally imply that residents are more satisfied with existing management services. On the other hand, customer loyalty is less likely to be reflected as repurchasing behaviour can hardly be quantified so the intention to stay with the existing service provider is taken as an indicator to reflect customer loyalty. According to the comparison-level theory, the consequences of satisfaction would also affect future customer expectations and satisfaction because customers would take into account of experience of other customers which can be in the form of word of mouth.

Based on this research model, a survey was conducted to collect data to test the relationships among antecedents, consequences and customer satisfaction under the three different security employment modes.

## Research Design

To achieve our study objective of exploring the relationships between resident expectations, perceptions and resident satisfaction, understanding residents is our first step to undertake this study. With reference to the literature of service quality and customer satisfaction, quantitative research is the most commonly adopted approach to assess concepts of relevance to this study like satisfaction, preferences and desires. Converting concepts to numeric data, statistical analysis can be done with different analytical models. For collecting quantitative data in this study, a face-to-face questionnaire survey was conducted by using a structured questionnaire.

To explore how resident satisfaction varies between different security employment modes, three similar residential estates with different security employment modes, namely hiring direct labour by a property management company (Estate A), contracting out of security services to a subsidiary company of a property management company (Estate B) and contracting out to a third-party security contractor (Estate C), were selected for the purpose of quantitative research. With similar development nature, locations, ages and housing market segments, it is envisaged that the residents of the 3 estates would share similar opinions and expectations on service levels of estate management, thereby minimizing the distortions arisen from other factors which are not included in this study.



Apart from the demographic profiles of the respondents, the survey questionnaire was designed to obtain primary data about resident expectations and perceived level of service on the six defined attributes of the security service, namely reliability, responsiveness, assurance, tangibles and empathy and equity, provided in the estates they are living in. Their feedbacks and

reactions for the success and failure of service delivery were also collated.

The questionnaire covers a total number of 37 questions. Following the structure of a multilevel model, a total number of 20 sub-attributes were tested under the six defined attributes as shown in Figure 2.

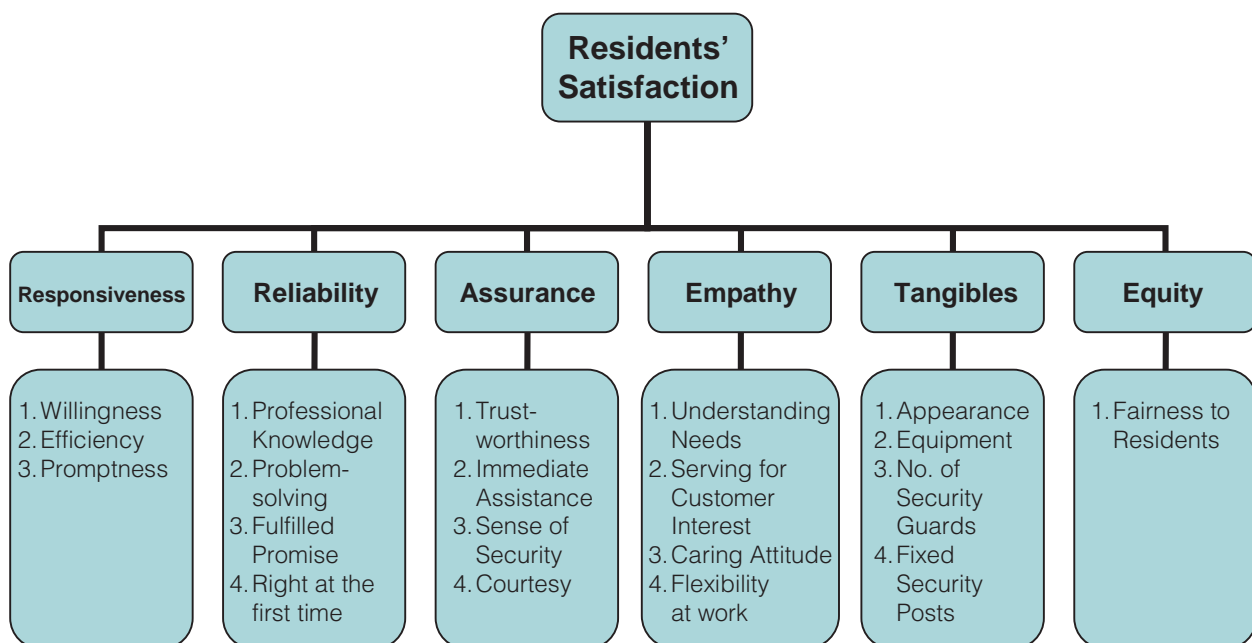


Figure 2 — Attributes and Sub-attributes for Measuring Resident Satisfaction

## Findings and Analyses

Different analysis methods have been applied in this study. Descriptive analysis was applied to obtain the general distribution of results. Multiple regression was employed to explore the relationships between the overall performance satisfaction and six designated attributes. The correlation analysis for testing the correlation with the mean value test and descriptive statistic to find out the relationship between overall performance satisfaction and the three identified consequences (i.e. loyalty, word of mouth and complaint).

## Relevance of Service Attributes in Security Service Evaluation

From the results of the statistical analysis shown in Table 1, it is observed that the factors affecting the residents' overall satisfaction depend on different factors and residents of different estates have their own measurement on rating their security service. For Estate A (direct labour), responsiveness was the most important, while tangibles was the most important in Estate B (subsidiary contractor) and tangibles, assurance and equity are important in Estate C (third-party contractor). Through knowing which attribute the residents value most, from a practical point of view, housing practitioners can more easily meet residents' expectations and improve the service provisions in order to achieve higher resident satisfaction.

Table 1 — Results of Multiple Regression Analysis (Attributes &amp; Resident Satisfaction)

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Multiple Correlation Coefficient (R)</b>	0.884	0.610	0.881
<b>R<sup>2</sup></b>	0.781	0.372	0.776
<b>Adjusted R Square</b>	0.750	0.284	0.745
<b>Std. Error of the Estimate</b>	0.48666	0.40052	0.48113
<b>F</b>	25.499	4.241	24.873
<b>Sig. F</b>	0.000	0.002	0.000
<b>(Constant)</b>			
1. Unstandardized Coefficients	1.280	1.430	-2.979
2. Standardized Coefficients			
3. T-value	4.270	1.133	-4.309
4. T Sig.	0.000	0.264	0.000
<b>Responsiveness</b>			
1. Unstandardized Coefficients	1.035	-0.170	-0.022
2. Standardized Coefficients	1.090	-0.152	-0.017
3. T-value	3.040	-1.157	-0.182
4. T Sig.	0.004	0.254	0.856
<b>Reliability</b>			
1. Unstandardized Coefficients	0.347	-0.003	0.094
2. Standardized Coefficients	0.374	-0.003	0.087
3. T-value	0.524	-0.022	0.929
4. T Sig.	0.603	0.983	0.358
<b>Assurance</b>			
1. Unstandardized Coefficients	-0.055	-0.240	0.363
2. Standardized Coefficients	-0.056	-0.162	0.246
3. T-value	-0.179	-1.193	2.592
4. T Sig.	0.859	0.239	0.013
<b>Empathy</b>			
1. Unstandardized Coefficients	-0.203	0.284	-0.112
2. Standardized Coefficients	-0.203	0.204	-0.066
3. T-value	-1.106	1.471	-0.656
4. T Sig.	0.275	0.149	0.516
<b>Tangibles</b>			
1. Unstandardized Coefficients	-0.423	0.787	0.971
2. Standardized Coefficients	-0.412	0.530	0.677
3. T-value	-1.289	4.105	6.075
4. T Sig.	0.204	0.000	0.000
<b>Equity</b>			
1. Unstandardized Coefficients	-0.052	-0.027	0.480
2. Standardized Coefficients	-0.059	-0.023	0.233
3. T-value	-0.110	-0.173	2.597
4. T Sig.	0.913	0.863	0.013

## Residents' Expectations, Perceptions and Resident Satisfaction

Customer satisfaction and service quality literature identifies that expectation and perception are related to customer satisfaction. By comparing the difference between residents' expectations and perceptions, we investigate the relationship between disconfirmation and resident satisfaction among the three different security employment modes.

## Resident Satisfaction among Different Security Employment Modes

The result of comparing resident satisfaction among different security employment modes showed that residents of Estate B (subsidiary contractor) enjoyed the highest level of satisfaction, followed by Estate A (direct labour) and Estate C (third-party contractor). Apart from the attribute of Reliability, Subsidiary Contractor had the highest level of satisfaction among the three security employment modes. It is quite interesting as direct labour has been commonly perceived by housing practitioners as the ideal way of security service provision by having direct control of staff quality and ongoing performance. However, a better alternative was revealed in this study.

Table 2 — Resident Satisfaction with Regard to the Six Service Attributes

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Attributes of Security Service</b>			
Responsiveness	3.64	3.94	3.32
Reliability	3.62	3.52	3.88
Assurance	3.88	3.98	3.52
Empathy	3.58	4.08	3.38
Tangibles	3.26	3.98	3.86
Equity	3.58	3.92	3.70
<b>Average Satisfaction Score</b>	<b>3.59</b>	<b>3.90</b>	<b>3.61</b>

Note: Figures are presented in Mean Score



Table 3 — Residents' Overall Satisfaction

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Level of Satisfaction</b>			
Very Satisfied	10.0	10.0	10.0
Satisfied	58.0	78.0	46.0
No Comment	8.0	12.0	22.0
Dissatisfied	24.0	0.0	28.0
Very Dissatisfied	0.0	0.0	4.0

*Note: Figures are presented in percentage*

Table 4 — Residents' Overall Satisfaction (Mean Score)

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Over Satisfaction</b>			
Mean Score	3.54	3.98	3.10

A possible explanation for the achievement of higher resident satisfaction for subsidiary contractor is the integration of advantages of both direct labour and third-party contractor. As specialized security companies, apart from economies of scale, subsidiary companies have better access to market information and expertise in security management as compared to direct labour. On the other hand, subsidiary companies also allow the principal (i.e. property management company) to have closer monitoring on service performance as compared to third-party companies. Besides, considering the branding of the head companies, subsidiary contractors have to be more committed to the provision of better services and have to handle problems raised by the clients in a serious manner with the pressure from head companies. Therefore, for direct labour, the challenge is how to achieve professional security service while for third-party contractor, the issue is how to cooperate with a property management company more closely to avoid service failure due to a communication gap.

### ***Existence of Expectation-Perception Gap in Service Attributes***

The existing literature about service quality (e.g. Parasuraman et al., 1985) proposes the expectation-perception gap as a determinant of customer satisfaction. From the findings of this research, such a service quality gap does exist in all attributes, reflecting that there is a fundamental difference between the residents' expected service level and perceived service level. Knowing the service quality gaps significantly contributes to customer satisfaction and referring to the study result of relevance of service attributes, it is important for housing practitioners to pay more attention to the attributes of which expectation-perception gap is significant to achieve a higher level of resident satisfaction.

Table 5 — Expected and Perceived Service of the Three Security Employment Modes

	Estate A (Direct Labour)		Estate B (Subsidiary Contractor)		Estate C (Third-party Contractor)	
	Expected Service	Perceived Service	Expected Service	Perceived Service	Expected Service	Perceived Service
<b>Responsiveness</b>	<b>4.16</b>	<b>3.83</b>	<b>3.97</b>	<b>3.79</b>	<b>3.97</b>	<b>3.09</b>
Promptness	4.00	3.88	3.28	3.78	4.18	3.38
Efficiency	4.30	3.86	3.86	3.88	3.84	3.12
Willingness	4.18	3.76	3.76	3.70	3.88	2.76
<b>Reliability</b>	<b>4.06</b>	<b>3.25</b>	<b>3.75</b>	<b>3.58</b>	<b>3.88</b>	<b>3.22</b>
Professional Knowledge	4.20	3.30	3.80	3.14	3.88	2.96
Problem-Solving	3.88	2.96	3.26	3.36	3.84	3.30
Fulfilled Promise	4.00	3.46	4.14	4.08	3.94	3.28
Right at the First Time	4.04	3.00	3.60	3.50	3.86	3.24
Trust-Worthiness	4.16	3.52	3.96	3.82	3.88	3.30
<b>Assurance</b>	<b>4.15</b>	<b>3.94</b>	<b>4.28</b>	<b>3.83</b>	<b>3.79</b>	<b>3.33</b>
Immediate Assistance	4.16	4.18	4.28	3.76	3.94	3.40
Sense of Protection	4.24	4.10	4.20	3.66	3.50	2.98
Courtesy	4.06	3.54	4.36	4.08	3.92	3.60
<b>Empathy</b>	<b>4.01</b>	<b>3.26</b>	<b>4.07</b>	<b>3.56</b>	<b>3.75</b>	<b>3.22</b>
Understanding Needs	4.04	3.58	3.92	3.88	3.64	3.22
Serving for Customer Interest	4.00	2.98	4.02	3.28	3.82	3.20
Caring Attitude	4.02	3.42	4.10	3.80	3.84	3.14
Flexibility	3.96	3.04	4.24	3.26	3.68	3.30
<b>Tangibles</b>	<b>4.09</b>	<b>4.05</b>	<b>4.29</b>	<b>3.81</b>	<b>4.15</b>	<b>3.40</b>
Appearance	4.00	4.26	4.04	3.74	4.28	3.60
Equipment	4.04	4.08	4.32	3.88	3.96	3.46
No. of Security	4.16	3.2	4.44	3.66	4.10	3.40
Attending Fixed Security Posts	4.16	3.94	4.34	3.96	4.26	3.12
<b>Equity</b>	<b>4.10</b>	<b>3.62</b>	<b>3.74</b>	<b>3.68</b>	<b>4.22</b>	<b>3.4</b>
Fairness to Customers	4.10	3.62	3.74	3.68	4.22	3.4

Note: Figures are presented in Mean Score

Table 6 — Aggregate Disconfirmation Scores of the Three Security Employment Modes

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Attributes of Security Service</b>			
Responsiveness	-0.33	-0.19	-0.88
Reliability	-1.01	-0.22	-0.83
Assurance	-0.21	-0.66	-0.46
Empathy	-0.75	-0.52	-0.53
Tangibles	-0.04	-0.48	-0.76
Equity	-0.48	-0.06	-0.82

By taking a more in-depth look, it is interesting to find that even though significant differences existed in disconfirmation scores among the three sample estates, resident perceptions did not vary to a large extent. Therefore, disconfirmation was more likely to be affected by residents' expectation than by perceptions. In other words, residents were dissatisfied not because of the slightly substandard services, but because of their relatively higher expectations. Therefore, exploring ways to manage residents' expectations becomes another key to resident satisfaction.

### Residents' Behaviour and Satisfaction

As suggested in the literature, there are several consequences or outcomes of customer satisfaction. Commencing with the study of residents' possible reaction to dissatisfaction with security performance using descriptive analysis, we will use factor analysis to evaluate the correlation of each consequence of satisfaction with resident satisfaction and establish their interrelationship, if any.

Table 7 — Residents' Reactions to Dissatisfying Security Performance

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Reactions for Dissatisfied Security Performance</b>			
No Action	32.0	10.0	6.0
Warn Family, Friends and Others	8.0	88.0	56.0
Making official complaints	60.0	2.0	38.0
Stop using the security service provider (by voting)	0.0	0.0	0.0
Others	0.0	0.0	4.0

Inconsistent with the literature, this study reveals that not all consequences of satisfaction can be applicable in the context of security service provision. Amongst the different reaction, most

people would tend to share with others (word of mouth) rather than making official complaints (complaining behaviour). However, both consequences are not found to be significantly correlated with resident satisfaction.



Table 8 — Resident Satisfaction and Sharing of Experience

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
Overall Resident Satisfaction	3.54	3.98	3.10
Sharing of Experience	2.00	2.54	2.44
<b>Pearson Correlation</b>	<b>0.372</b>	<b>0.310</b>	<b>0.432</b>

Note: small: (0.1-0.3), medium: (0.3-0.5), large: (0.5-1.0)

Table 9 — Resident Satisfaction and Gratitude

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
Overall Resident Satisfaction	3.54	3.98	3.10
Gratitude	3.02	2.64	2.78
<b>Pearson Correlation</b>	<b>0.670</b>	<b>0.065</b>	<b>0.032</b>

Note: small: (0.1-0.3), medium: (0.3-0.5), large: (0.5-1.0)

The findings are quite different from our presumption that residents with fewer complaints were genuinely more satisfied with the security service they received. The lack of complaining behaviour for security service can be explained by the locus of causality and stability of the Attribution Theory. With high levels of resident involvement in daily security service, locus of causality referred

to residents' attitude to attribute the dissatisfaction to themselves or their external environment. When stability indicated causes are thought not to vary over time, if the security service provided is consistent, even substandard, residents lack the initiative to complain unless there is a critical service failure, such as burglary, or a sudden drop in security service quality.

Table 10 — Complaint Channels in the Three Sample Estates

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Knowledge about Security service provider</b>			
Management Office	50.0	60.0	56.0
Security Service Provider	0.0	0.0	4.0
Headquarter of Management company	50.0	40.0	40.0
Others	0.0	0.0	0.0

Note: Figures are presented in percentage

Table 11 — Resident Satisfaction and Complaint Frequencies

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
Overall Resident Satisfaction	3.54	3.98	3.10
Complaint Frequency	1.70	1.76	1.76
<b>Pearson Correlation</b>	<b>-2.18</b>	<b>-0.214</b>	<b>-0.114</b>

Note: small: (0.1-0.3), medium: (0.3-0.5), large: (0.5-1.0)

As for customer loyalty, direct labour enables more stable manpower and higher familiarity with security guards, but there is no significant

difference observed among different security employment in terms of familiarities with security guards or relationship with security companies.

Table 12 — Familiarity with Security Guards in 3 Sample Estates

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Degree of Familiarity with Security Guards</b>			
Very Familiar	16.0	0.0	4.0
Familiar	42.0	30.0	18.0
Moderately Familiar	24.0	6.0	60.0
Unfamiliar	10.0	64.0	12.0
Very unfamiliar	8.0	0.0	6.0

Note: Figures are presented in percentage

Table 13 — Knowledge about Security service provider in the 3 Sample Estates

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
<b>Knowledge about Security service provider</b>			
Very Familiar	18.0	28.0	4.0
Familiar	42.0	8.0	26.0
Moderately Familiar	18.0	0.0	18.0
Unfamiliar	14.0	64.0	52.0
Very unfamiliar	8.0	0.0	0.0

Note: Figures are presented in percentage

In spite of the strong correlation between resident satisfaction and retaining choice of the residents, there is a fundamental difference with the literature about exit-voice behaviour (Hirschman, 1970). The results of descriptive analysis indicate that no resident would actually vote out the contractor. Therefore, the results of the 2 analyses were contradictory. It also indicated that even though

even the dissatisfied residents wanted change, their intention was rarely converted into action by way of exercising their voting right in the Annual General Meeting to discontinue the service security service provider as residents still did not trust their individual power in estate management matters and were more reluctant to change.

Table 14 — FaResident Satisfaction and Retaining Behaviour

	Estate A (Direct Labour)	Estate B (Subsidiary Contractor)	Estate C (Third-party Contractor)
Overall Resident Satisfaction	3.54	3.98	3.10
Selecting Current Service Provider	3.40	3.56	3.34
<b>Pearson Correlation</b>	<b>0.743</b>	<b>0.723</b>	<b>0.785</b>

Note: small: (0.1-0.3), medium: (0.3-0.5), large: (0.5-1.0)

## Limitations of the Research

This research has several limitations. First, the respondents did not significantly represent the majority of the estate. Due to the different scales of the three sample estates, 50 respondents occupied different percentage of total units in these estates. Second, the number of estates covered is another limitation to this study as selecting only one sample estate for each security employment mode hampers our confidence to generalize our findings across Hong Kong's private housing sector. In this study, to minimize the distortions due to other factors, all sample estates selected are small scale, medium market residential estates with simple manpower structure. But this also means that our survey findings may not be applicable to other types of residential estates, such as luxury and upper market estates where more personalized security service is required, and resident expectations and perceptions may be significantly different.

## Conclusion

The purpose of this study is to examine which type of security modes best suits Hong Kong property management and meets the expectation of the residents through a set of survey and analysis. With the above methodology and the survey results, the security service provided by subsidiary contractor is rated with the highest score amongst three modes in the residents' expectations. That is, by observing the residents' satisfaction and expectation as well as other attributes, subsidiary contractor performs the best in the eyes of the residents. This suggests that the subsidiary contractor is the best mode in property management to meet the residents' expectations with regard to security services. There is room for exploring these issues further and discussing aspects of which type of the modes is the best.



Serving as a reference, this paper assesses and evaluates which attributes are important to generate higher customers' satisfaction. From our study, subsidiary contractor is the best type amongst three modes for security service. However, it is understood that the existing mode of security in estates is extremely hard to shift to subsidiary mode. Not every property management company owns its subsidiary contractor and the employment of security contractor involves a resolution at an Owners' Meeting, meaning that the property management company does not have the right to control the security employment mode. Therefore the property management industry may refer to this paper and improve the relevant criteria of each mode to maximize customer satisfaction with security services at their estate.

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