

A Project entitled

**Analysing the Community Green Stations'**

**performance in changing public recycling behaviour:**

**A case study of GREEN@YUEN LONG,**

**GREEN@YUEN LONG HUI, and GREEN@ LONG**

**PING**

Submitted by

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# DECLARATION

I, Chan Man Lam declare that this research report represents my own work under the supervision of Dr Pei Qing, and that it has not been submitted previously for examination to any tertiary institution.

Signed

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10.04.2023

# ABSTRACT

Recently, government has developed Community Green Stations (CGS) in each of the districts in order to relieve landfill saturation and promote a green lifestyle. CGSs are facilities to enhance the environment-educational and provide a location to collect the recyclables at the district level thereby gaining more community support. This research aims to analyse the performance of CGSs through studying three CGSs in Yuen Long district. To achieve these goals, questionnaires distributed to 208 visitors and residents of Yuen Long district in February 2023. In addition, field visits to the three CGSs conducted in February and March 2023. The performance of the exhibits, environmental - educational programmes, and recycling facilities offered by CGSs received an average score of 3.56, 3.65, and 3.97 out of 5 from visitors, respectively. Although participants were mostly pleased with the services, there was plenty of potential for improvement disclosed. It has been demonstrated that the inaccessibility of CGSs or their location further from where residents live have a negative effect on their popularity, especially the GREEN@YUEN LONG. The questionnaires results suggested a significant correlation between the demographic characteristics and their purposes and knowledge with CGSs ( $p < 0.05$ ). It is hoped that society can chalk this one up to experience as enhancing the environmental-education and promoting recycling habits in Hong Kong.

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## **1. Introduction**

### **1.1. Background**

Under the " Hong Kong Blueprint for Sustainable Use of Resources 2013– 2022", the government has established the objective of lowering the per capita municipal solid waste (MSW) disposal rate by 40% by 2022. (Environment Bureau, 2013). To accomplish the goal, the government has established the Community Green Stations (CGSs) in each of the districts in order to foster the environment-educational as well as enhance community engagement in waste management –‘Use Less, Waste Less’ . Those CGS are operated by non-government organizations ( NGOs) (Environment Bureau, 2013).

Community Green Stations (CGSs) are facilities to enhance the environment-education through exhibits, on-site activities ,and provide a location to collect the low-valued recyclables at the district level which have similar objectives of Community Recycling Network. thereby gaining more community support and promoting a culture of green lifestyle . There are three categories of CGSs : Recycling Stations, Recycling Stores and Recycling Spots, which collect low commercial value recyclables. Paper, plastic, glass, metals, electronic and electrical devices, fluorescent lamps and tubes and rechargeable batteries are the recyclables now. Then those recyclables would be transported to certified downstream recycler such as Mil Mill for further processing into resources (Environmental Protection Department, 2022).

Meanwhile, the CGSs has assisted in introducing the quantity-based MSW charging through waste education in reduction and recycling, as well as supporting the scheme of Producer Responsibility Scheme (PRS),which includes waste electrical and electronic equipment (“WEEE”) and glass beverage bottles by building publicity and public awareness in ‘clean recycling’ practices (Environmental Protection Department, 2015).

Since 2015, the CGSs has been established in district level. In 2017, GREEN@YUEN LONG opened to the public. (Environmental Protection Department, 2021). Then, there are 11

recycling stations has operation in different districts which have collected over thousand tons of recyclables and held more than eight thousand environment-educational events to receive more than two million visitors up to August 2021 (Environmental Protection Department, 2022).

## **1.2. Operation of GREEN@YUEN LONG, GREEN@ YUEN LONG HUI and GREEN@ LONG PING**

### **1.2.1. GREEN@YUEN LONG**

The fourth CGS operating in Hong Kong, GREEN@ YUEN LONG is located at 65 Tin Wah Road, close to Hong Kong Wetland Park ( Figure 1.1). It is open daily from 8 am to 8 pm.

The recycling station is operated by Hong Chi Association. (GREEN@YUEN LONG,2023; Environmental Protection Department, 2023) Since January 2017, GREEN@YUEN LONG has held various environment-educational events such as seminars, workshops, exhibitions, tours held in situ, in the housing estates and online (GREEN@ YUEN LONG, 2023).

Additionally, to promote waste reduction in Yuen Long areas, recycling spots have been positioned in accessible public areas, such as near LRT stations and shopping malls (Environmental Protection Department, 2023). With the influence of GREEN@YUEN LONG, it is believed that green recycling habitats and lifestyles can be promoted into the Yuen Long Community.

Figure 1.1 Map of the location of GREEN@YUEN LONG. Source: GREEN@ YUEN LONG (2023)





### 1.2.3. GREEN@LONG PING

GREEN@ LONG PING is a recycling store in Phase 2 of the community recycling network available to the public in Hong Kong from 2022 (Environmental Protection Department,2023). It is located at Shop K & L, G/F, Hung Fat House, 87-99 Kau Yuk Road near Yuen Long Sport Center (Figure 1.3). It opens daily from 9am to 7pm. The recycling station is operated by Pumen Foundation Limited (Environmental Protection Department,2023). The major function of this store is helping collect recyclables. Because of the limited space, most of the environment-educational activities are held in public squares or in country parks such as mountain clean-up in Tai Lam Country Park in 2021 to promote waste reduction in Yuen Long Districts (GREEN@LONG PING,2023).

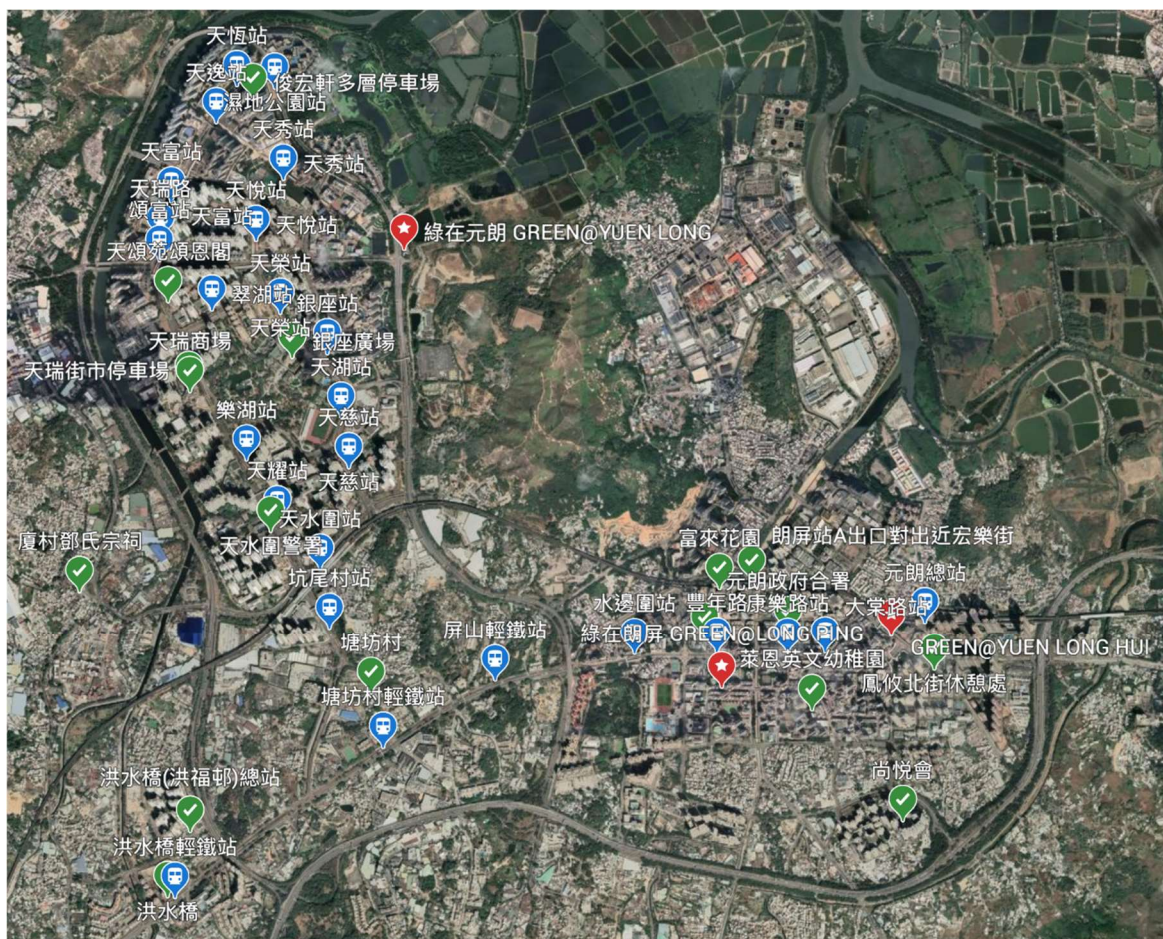
Figure 1.3 Map of the location of GREEN@LONG PING . Source: Google Map



Additionally, to promote waste reduction in Yuen Long areas, recycling spots have been positioned in accessible public areas, such as near LRT stations and shopping malls (Figure 1.4) (Environmental Protection Department, 2023). With the influence of GREEN@YUEN LONG and GREEN@YUEN LONG HUI and GREEN@ LONG PING , it is believed that green recycling habitats and lifestyles can be promoted into the Yuen Long Community.

Figure 1.4 Map of the locations of Recycling station, recycling stores and recycling spot in Yuen Long District (Red: GREEN@YUEN LONG, GREEN@YUEN LONG HUI, GREEN@LONG PING; Green: Recycling Spots; Blue: Light Rail Stations in Yuen Long District)





### 1.3. Brief literature review

Establishment of CGSs has been conducted for eight years in promoting environment-educational and awareness. There is an absence of development and progress-related research. According to Woo (2014), before the official introduction of the CGS initiative, a qualitative dissertation on food waste was noticed, which gained positive feedback from foodservice sectors and NGOs discussing CGSs. Also, according to Environmental Protection Department (2015), there are some opinions about the development of CGSs in terms of environment-educational and recycling programmes. Besides, quantitative quarterly reports documenting the operations of each CGS, including the number of visits, the number of recyclables collected, the number of environment-educational activities, and the number of recycling services, are available to the public. (Appendix A) (GREEN@YUEN LONG (2023), GREEN@YUEN ONG HUI (2023), GREEN@LONG PING (2023). Also, studies have been performed to determine the factors that may influence the performance of the environment-

educational and the recycling facilities provided by CGSs by reviewing journal papers and foreign methodologies.

#### **1.4. Research gap**

CGS development is continuing at rapid pace. Despite the fact that CGSs have been in use in Hong Kong for eight years, little comprehensive study has been conducted on this topic. A limited number of stakeholders supported the establishment of this community recycling network, according to Woo (2014). Sadly, the interview took place before the establishment of CGSs, therefore opinions from the study's key stakeholder, visitors, and local residents, were not recorded. The findings are out of date and inadequate. While opinions were collected on the development of CGSs in October 2015, this report only examined the first stages of CGSs operation in Sha Tin CGS and Eastern CGS, which need more research on progressively development in other districts. At the same time, according to the operational data available in the quarterly reports of three CGSs in Yuen Long, the quantity of recyclables collected had already increased. However, the performance statistics do not indicate whether or not the CGS project is beneficial and effective in enhancing environment-educational and waste reduction in Hong Kong (Wong, 2017). Thus, it is necessary to carry out a study to collect the views of visitors as well as residents in each district about CGSs in order to evaluate the performance of the project more realistically and comprehensively and figure out the improvement periodically.

#### **1.5. Study Aims and Objectives**

In light of the results of the literature review, a research gaps have been found. This research aims to determine how performance of community green stations through carrying out case studies on GREEN@YUEN LONG, GREEN@YUEN LONG HUI and GREEN@LONG PING.

The goals of this research are:

- Examine the level to which CGSs fulfil their aims.



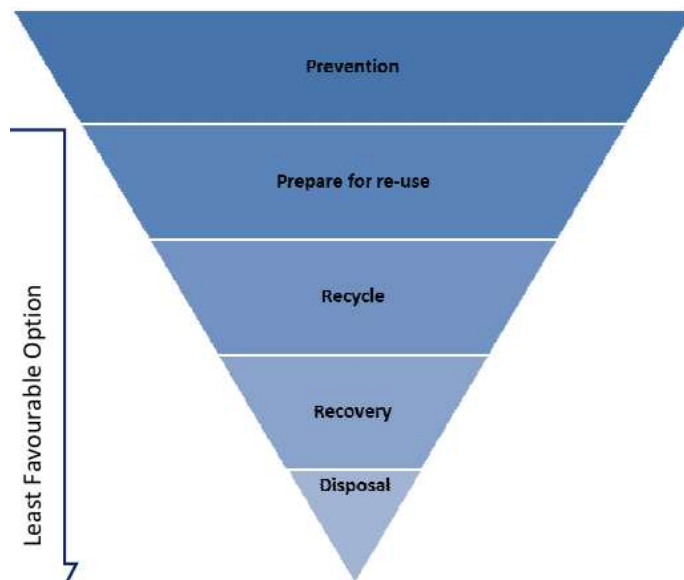
- Determine the residents and visitors of Yuen Long's recognise of CGSs, their attitudes and habits towards recycling
- Evaluate the district-level of CGS publicity.
- Examine the mission and responsibilities of CGSs in Hong Kong regarding environment-educational and waste reduction.
- Provide doable suggestions for improving the stations based on the findings from questionnaires and field visits.

## 2. Literature Review

### 2.1. Concepts of waste management- Waste Hierarchy

In 1975, the Waste Framework Directive of European Union introduced the concept of waste hierarchy for the first time (Lee, et al. 2017). It has become the guidelines principle for municipal solid waste management globally. There are five ways of waste management (Figure 2.1) which has interpreted the preferable combination of waste management approach with the greatest overall sustainable benefits in long term, especially in environmental benefits (Directive, E. C., 2008; Hultman, & Corvellec, 2012).

Figure 2.1 Waste Hierarchy. Source: Papargyropoulou, Lozano, Steinberger, Wright, & bin Ujang, (2014).



#### 2.1.1. Prevention

Waste prevention aims to reduce the wastes from the sources, as waste minimisation which is the most preferable approach in order to reduce the waste production (Hopper et al., 1993).

This involves consumer behaviours that promote thriftiness such maintenance, and second-hand shopping as well as design with reusing and recycling, leakage elimination in manufacturing (Hultman, & Corvellec, 2012). But the adoption of waste prevention at the source would be a complicated practices because it would require a change in attitudes, as well as careful planning and progressive implementation. The general public will need to be educated about the importance and advantages of waste management (Gupta et al., 1998). Education,

an increase in public awareness and motivation to change their habits to enhance the performance in waste minimization.

#### 2.1.2. Reuse

Reuse includes reusing products before they were refused. These practices encourage products in stages of commodity and non-commodity can be used full-repeatedly which can extend the life cycle of the products to reduce the environmental negative impact from waste management, such as leaning, checking, and repairing.

#### 2.1.3. Recycling

Recycling means reprocessing the recyclables which can alleviate the problems of landfill saturation. Because the recyclables can be returned into industrial and biological production process via disassembling, separating, and circulating in order to conserve resources and reduce natural resource extraction (Jin, Wang, & Ran, 2006;). High social participation rates in recycling can bring long-term environmental protection and resource conservation benefits, which can be explained by intrinsic motivations such as personal satisfactions associated with participating in an activity to conserve resources and be frugal with the attitude such as because it seems like the right thing to do (De Young 1986, 1988,1990).

#### 2.1.4. Recovery

Recovery is a process of using modern technology to generate energy such as from anaerobic digestion or incineration. The materials can be transformed into heat and electricity through incineration as waste-to-energy (Pires, & Martinho,2019).which can become one of the sources of renewable energy.

#### 2.1.5. Disposal

In the hierarchy, disposal is the least preferable approach which waste is disposed in landfills. Landfilling can produce methane and carbon dioxide in natural decomposition process which increase the greenhouse gases concentration in the atmosphere as well as intensify the climate

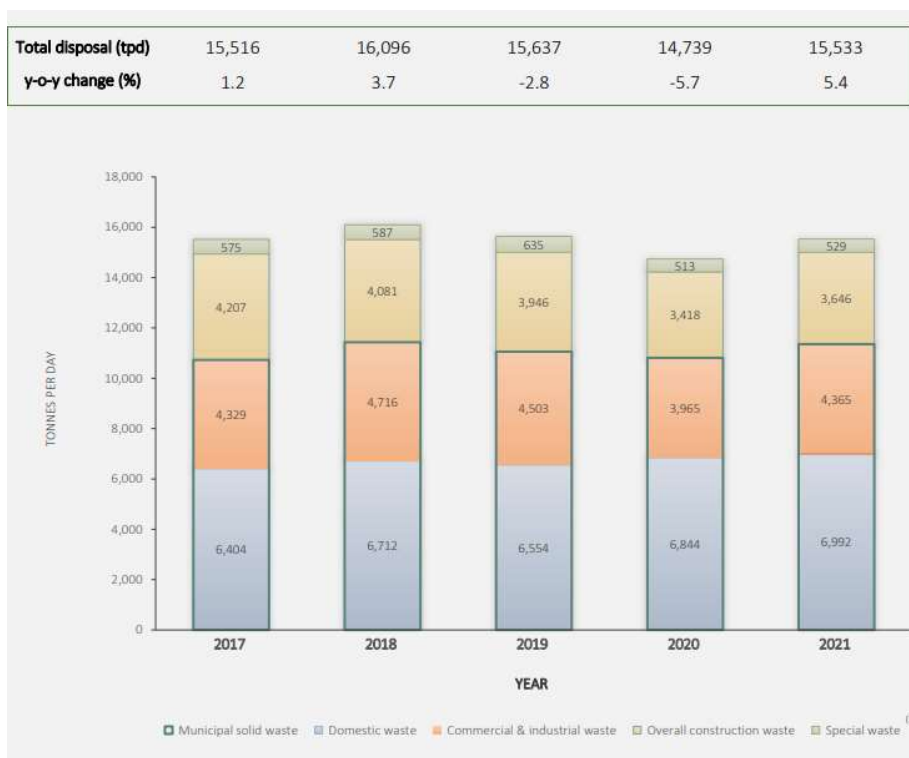
change by trapping more heat.( Papargyropoulou, Lozano, Steinberger, Wright, & bin Ujang, 2014).

## **2.2. Solid waste source and management in Hong Kong**

### **2.2.1. Overview**

Hong Kong has produced multiple types of solid waste every day. Solid waste in Hong Kong consists of municipal solid waste(i.e., from domestic, commercials and industries),construction waste and other special waste (Environmental Protection Department, 2022). Compared to 2020, the total amount of disposed solid waste at strategic landfills increase by 5.4% in 2021 to 5.67 million tonnes (Environmental Protection Department, 2022). Specifically, the average daily amount of municipal solid waste in Yuen Long, the location of this research's case study, was 1,553 tonnes per day. Since 2019, the quantity of disposed solid waste in landfill had been on the fall but has a rise from 2021(Figure 4.2). It is evident that Hong Kong has an enormous load of waste. However, three landfills will be saturated sequentially under an immense pressure from increasing waste which the government has decided to install incineration and expand the landfill (Environmental Protection Department,2012). With this problem, government has set a target of reducing the per capita munipal solid waste disposal rate by 40-45% and increasing the recycling rate by 55% by 2035(HK Environment Bureau, 2021). At the same time, the reliance of landfill is hoped to be removed in future by increasing the amount of recycling and recovery rate.

Figure 2.2 Disposal of total solid waste at landfills from 2017 to 2021 - By main waste category. Source: Environmental Protection Department, 2022



### 2.2.2. Development of waste management in Hong Kong

Since the introduction of waste hierarchy, Hong Kong has adopted this guidelines principle in determining the waste management policies and measures (Environmental Protection Department, 2005) aimed at increasing the recycling rate which has mentioned in the Waste Blueprint for Hong Kong 2035 (Environment Bureau, 2021).

First, the strategies for increasing the public recycling rate from policy development are MSW charging and mandatory Producer responsibility scheme (PRS). They can incentivize to change their waste habit and engage more participation in recycling and reduction. The government has decided to implement legislation of MSW charging for six years. Since 2018, government has partnered with different stakeholders such as rural areas, public housing, and shopping malls to practice MSW charging in daily life as trials and passed the Waste Disposal (Charging for Municipal Solid Waste) (Amendment) Bill 2018 by the Legislative Council on 2021 which has started the preparatory period. It is expected to be implemented in late 2023 (Environmental Protection Department, 2022). In addition, after the successful implementation of the Environmental Levy Scheme on Plastic Shopping Bags(i.e., the

beginning part of PRS), WEEE and glass beverage bottles has been introduced in the list of the PRS since 2016. Green procurement and Recycling Fund are the examples of additional policy incentive( Environment Bureau, 2021).

Second, social participation is important to enhance the public recycling rate and the environmental awareness which includes implementing relevant programmes and funding. Hong Kong residents are familiar with the Programme on Source Separation of Domestic Waste (SSWP) which has carried out since 2005 to motivate public participation in recycling from waste separation of recyclables (Environmental Protection Department, 2022) that provide waste separation facilities as the three-coloured recycling bins ‘ blue for paper, brown for plastic bottles and yellow for alumni cans’ to each participating housing estates. It has covered over 80% of population in Hong Kong. In 2011, the Community Recycling Network was also established to boost recycling and public awareness about recycling by providing services to people living in buildings without waste recycling facilities and emphasising with low economic value recyclables such a glass bottle and small WEEE. Besides, In October 2015, government launched \$1 billion recycling fund to support the sustainable development of local recycling industries by improving their operations capabilities and effectiveness. Third, recycling infrastructure is important to support the development of recycling activities in Hong Kong. In recent year, CGSs is an important programme to boost recycling which is the focus to this study. EcoPark is the important to support the operation of CGSs, where has provided affordable land rent with sufficient amenities to the recycling industry (EcoPark, 2023) .Also, government has designated 20-hectares of land for EcoPark expansion which boost the development of local recycling industries (Environmental Protection Department, 2021).

### 2.2.3. Obstacles and Prospects

The first obstacle is the public distrustfulness. Over the years, residents have questioned the authenticity of the waste separation and collection system. Public are doubtful on whether their

recycling efforts are contributing to an increase in waste recovery and recycling. There is no way of determining if all recyclables were treated properly instead of disposed of to landfills since the recycling process is not disclosed to any regulation. Even some waste collectors were observed and tracked to simply throw everything from the recycling bins together, which recyclables was treated as trash. Then, there are many concerns on the absence of a comprehensive and convenient recycling system would reduce the public motivation to make effort on waste reduction. The CGS programme might help to sustain the public trust which government monitor the recycling operations in CGSs which recyclables will be transported to suitable downstream recycler for proper treatment. The public's motivation to recycle will increase as a result of the system's trustworthiness.

Second, the obstacle is the local recycling industry has high operational cost. Since Hong Kong has limited land supply and funding support, it is not easy to set up and run recycling industry with high operational cost. Due to those constraints, recycling industries often only recycle high-valued recyclables such as metal, used electronical and electrical devices. Waste plastic, waste glass and food waste are examples of low-valued recyclables that would be sent to landfills (Environment Bureau, 2013). The example is South China Paper Limited which operated to collect local waste paper and turn them into something useful. But because the operating costs were high and tighter environmental regulation, the last waste paper recycling industry was closed in 2006. (Cheung, 2018). It shows how challenging it is to create a sustainable recycling business.

The establishment of CGSs helps in the integration of the local recycling network. Plenty of recyclables can be collected and delivered to downstream recyclers under the provision of logistical support and promotion of the concepts of 'clean recycling' to the public. Therefore, the amount of recyclables available to recyclers will increase, and their operating expenses will drop which encourage the growth of local recycling industry.

### **2.3. Environment-education in Hong Kong**

### 2.3.1. Overview

Environmental- education is important goal for Hong Kong where has implemented a diversity of environment-educational programme to enhance awareness of environmental conservation and motivate public participation through community and school. The Environmental Campaign Committee, the Environmental Protection Department, and the Education Bureau work jointly to accomplish efforts which are both aimed to alter public awareness of environmental conservation and encourage public participation in different environmental issues (Environmental Protection Department, 1999).

### 2.3.2. In schools

The beginning of environmental education in school is in 1990s. In 1992, "Guidelines on Environmental Education in Schools" were released to all schools in Hong Kong. Since then, environmental education has become more importance in schools, and a cross-cuticular strategy for promoting environmental education through both official and informal classes has been adopted (HK EPD, 1999). Although there are no specific environmental education courses, environmental education principles are integrated into different subjects. In primary school, environment education has integrated into General Studies. In secondary school, environment education can be integrated in different subjects such as Liberal Studies, geography, science (Environmental Protection Department, 1999; Chiu, 2016). Besides, Environmental Campaign Committee, the Environmental Protection Department, and the Education Bureau has organised a number of extracurricular programmes for schools such as Green Prefect Programme, Student Environmental Protection Ambassador (SEPA) Scheme (Environmental Campaign Committee,2021) in order to attract more attention in environmental protection.

### 2.3.3. In community

The Environmental Campaign Committee has collaborated with the EPD to organise multiple environmental initiatives for different parts of the community, including Community Waste



Reduction Projects, Environmental Research, Technology Demonstration and Conference Projects (Environment and Conservation Fund,2023). In order to promote environmental education in the community, funding and infrastructures are needed to establish. The Environment and Conservation Fund performs a crucial role in supporting events about awareness of environmental conservation include workshops, field trips, publication, and survey (Environment and Conservation Fund,2023). The government is progressively developing CGSs to promote environmental awareness and raise the value of recycling among the public , which are the focus of this study

#### 2.3.4. Obstacles and Prospects

The first obstacle is the value-action gap. Environment-education is gaining much attention in both school and community development. Although the majority of Hong Kong public have environmental knowledge such as the importance of environmental conservation, sustainability, they lack pro-environmental behaviours as the environmental practices in daily life. For example, the quantity of MSW recovery increased slightly from 28% in 2020 to 31% in 2021(Environmental Protection Department, 2022), though a large variety of environmental programmes held in

Hong Kong these years. It indicates there is a existed big value-action gap. Also, from the study of Outdoor Wildlife Learning Hong Kong(2019), environmental education in current curriculum emphasises the environmental education on promoting the environmental awareness and the gaining of environmental knowledge. But there is a large room of improvement in implementation of environmental education from experience such as field studies and learning in formal lessons which are aimed to develop pro-environmental attitudes, skills, and participation. Due to a lack of environmental education from experiences, education in school is not comprehensive and difficult to improve the performance. Then, the establishment of CGSs in Hong Kong can increases the awareness of environmental

protection concepts. Also, public has the opportunity to join different workshops such as upcycling one to turn ‘waste to resources’ and utilize recycling facilities in CGSs.

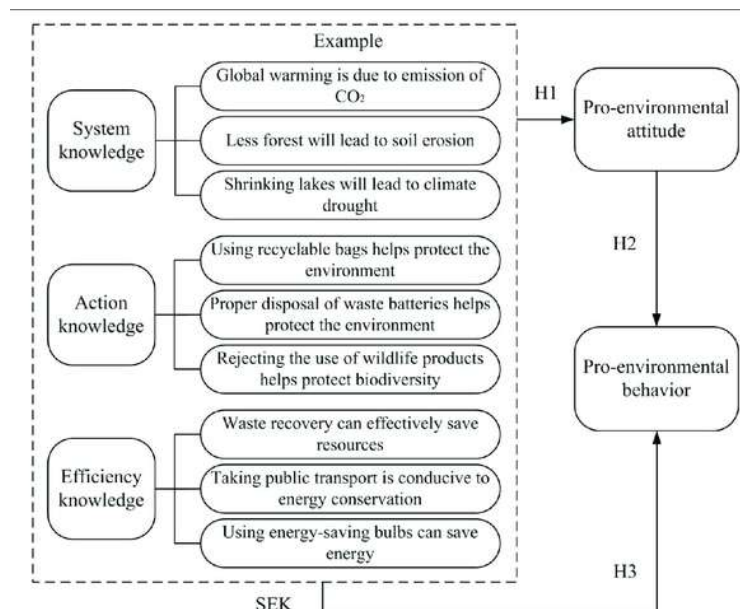
Second obstacle is the weak recycling concepts. Public have a limited understanding of clean recycling under the environmental education. It is typical to see recycling bins with other trash, such as food waste, used tissues and unfinished beverages which will either be disposed in landfills or deteriorated in bins. It reduces the economic values of the recyclables (Hong Kong Environment Bureau, 2013). Therefore, the importance of the concept of clean recycling is promoted in CGSs which can be improved through environmental activities and exhibits to guarantee both the quality and quantity of recyclables collected (Environmental Protection Department,2022)

## 2.4.KAP(Knowledge, Attitude and Practices) theory in pro-environmental behaviours

The KAP theory describe the relationship between knowledge, attitudes, and practices.

(Schwartz, 1976)(Figure 2.3). which was developed as a tool for analysing the knowledge, attitudes, and practices of participation in pro-environmental behaviours.

Figure 2.3 model of KAP theory .Source: (Wang,& Zhang,2021).



### 2.4.1. Knowledge in pro-environmental behaviours

Knowledge means the learning, retention as well as and utilisation of information along with experience and skills from environmental education and field experience such as waste reduction and recycling which can enhance the attitude. For instance, green consumers are more likely to recognise the importance of purchasing eco-friendly goods and the recycling logos on packaging. Besides, system knowledge, action knowledge and efficiency knowledge are three types of environmental knowledge(Wang,& Zhang,2021). System knowledge is the understanding of the fundamental condition and structures of natural ecosystem such as the fact that carbon dioxide emissions worsen global warming. Action knowledge is the understanding of which environmental protection actions are most effective such as using recycling bags instead of using plastic bags. Efficiency knowledge is the understanding of energy and resource conservation such as waste recovery can effectively conserve resources(Wang, K & Zhang, 2021). Those development of environmental knowledge can allow public to reflect on their practices and then improve habits carefully in order to care about the problems and figure out the solutions of environmental issues.

#### 2.4.2. Attitudes in pro-environmental behaviours

Attitude is a psychological tendency of preference or belief in deciding environmental practices based on internal feelings and emotions, such as the acceptance of a behaviour (Baba-Nalikant et al., 2023). When environmental knowledge increases, environmental attitudes change positively (Cappetta and Magni, 2015). Many prior studies have shown that those with greater knowledge of the environment have a more favourable attitude towards environmental protection. When the public has the same expectations and attitudes, social norms are formed to control behaviours as collective responsibility for the environment without legal regulations. Cultural backgrounds and interpersonal relationships that encourage the public to engage in pro-environmental behaviours can develop social norms (Knickmeyer, 2020).

#### 2.4.3. Practices in pro-environmental behaviours

Practices are what the public do to solve the MSW problems and participate in environmental conservation issues which is influenced by attitude positively (Taufique et al., 2016) in order to achieve the goals of sustainability. For example, individuals may choose to separate their recyclables from their household waste, compost their organic waste, or participate in community clean-up events. These actions not only contribute to a cleaner and healthier environment, but also help to mitigate the negative impacts of waste on social development.

## **2.5. Factors affecting the performance of waste reduction and recycling services in CGSs**

CGSs are focused on fostering environment-educational and supporting waste recycling at the district level (Environmental Protection Department, 2017a). In order for CGSs to be effective, affecting factors are found and evidenced by journal articles and foreign cases. Taiwan and South Korea are exceptionally effective at developing ecosystems and reducing waste disposal, and our city could learn from their achievements. (Environment Bureau, 2013).

### **2.5.1. Environment-education**

The objective of providing environment-educational is to promote sustainable practices from knowledge, attitude and achieve the pro-environmental behaviours . However, environmental knowledge and attitude are not the only factors affecting the pro-environmental behaviours which is composed of external and internal influences (Kollmuss & Agyeman, 2002).

External influences consist of educational, socio-cultural, and economic factors (Kollmuss & Agyeman, 2002). First, the pro-environmental behaviours need the provision of infrastructure such as the recycling centres. And the Mid- Autumn Festival may be used to illustrate socio-cultural influences. During the festival in Hong Kong, many children would play with glowsticks. People are used to this behaviour despite the fact that it is environmentally unfavourable and may pollute the water bodies (Greenpower, 2019) .Then, the implementation of economic incentives can encourage raising the environmental awareness.

Environmental knowledge, engagement, beliefs, attitudes, internal control, feelings, awareness, responsibilities, and priorities are the examples of internal influences (Kollmuss & Agyeman, 2002). Pro-environmental behaviour requires fundamental environmental understanding. Research reveals that knowledge alone does not predict pro-environmental behaviour (Kempton et al., 1999). A person requires engagement, positive environmental beliefs (developed by early life in nature, experiences of pro-environmental damage, family beliefs, pro-environmental institutions, leaders, and education), and attitudes to take decisions. Moreover, environmental awareness is necessary, but it may be constrained by the non-immediacy, delayed ecological degradation, and complexity of most environmental issues. That a person with a higher level of emotional responses to environmental deterioration and a high degree of autonomy (those who assume their behaviours have a big influence on the environment) is more motivated to behave environmentally friendly. Finally, beliefs and attitudes shape responsibilities and priorities, which determine pro-environmental behaviour. Pro-environmental behaviour is only persuaded when it improves personal well-being (Kollmuss & Agyeman, 2002).

#### 2.5.2. Waste reduction and recycling facilities

Accessibility and convenience must be included in the community waste reduction and recycling programme (Chao, 2008). Various research revealed that the accessibility and convenience of the recycling facilities has positive relationship with the recycling behaviours (Oskamp et al., 1998).

Studying from South Korea, the government implemented the volume-based garbage collection fee (VGCF) system from 1995 to boost the recycling rate (Kim, 2004).

Also, 'Keep Trash Off the Ground' (KTOG) was successful in Taiwanese cities. Waste collection teams used to collect rubbish at certain locations and times. Recycling vehicles now often follow trash trucks during waste collection, making it much easier to collect recyclables (Chao, 2008; Lu et al., 2006). This strategy makes recycling easier for residents and boosts

their recycling engagement. It is backed by data of rising recycling rates and declining waste quantity rise. Convenience has been shown to promote recycling, putting it the crucial to performance (Chao, 2008).

Meanwhile, economic incentives are also important for waste collection. Taipei City has implemented a "Per Bag Trash Collection Fee Policy" (PBTCTF). Before implementation, only pro-environmentalists recycled. Regarding implementation, residents must buy authorized garbage bags for waste disposal while recyclables are free to collected. Then, people would like to take action in recycling and waste reduction in order to avoid the garbage bag fees. So, the economic incentives can affect the recycling practices dramatically (Chao, 2008).

Nonetheless, media can affect the performance of waste reduction and recycling programme. Because it is one of the major sources of affecting the subjective norms which can promote the waste reduction from source, separation, and recycling with green behaviours easily (Chan,1998)

## **2.6.Opinions about the implementations of the CGSs services**

### **2.6.1. Positive feedback of the CGSs services**

In terms of ‘Education and Publicity’, foodservice supplier and NGO officials were willing to help promoting environment-educational and food waste source in Hong Kong from the individual interviews because they think CGSs could provide a convenient and accessible way for residents to recycle and dispose of household waste, including food waste. And they would like to attend the CGSs’ environmental events to promote the environmental awareness and have discussion opportunities with government and operators (Woo, 2014). Also, the CGS facilities were also appreciated by NGOs officials. They believed that NGOs should lead CGS development since they have an extensive public connection in the district. NGOs also have much experience to organise environment-educational events to encourage the sustainable practices (Woo, 2014). Besides, the government should handle environmental concerns instead of NGOs or other green organisations because the stations are not adequately

equipped to handle the high volume of waste generated in Hong Kong, especially the problem of landfill saturation and that they would not provide enough support or incentives for residents to adopt sustainable practices (Wong, 2017). Therefore, further research and evaluation would be needed to determine performance and potential of CGSs for addressing the city's waste management challenges.

#### 2.6.2. Opinions about the development of CGSs

CGSs in Hong Kong are operated by experienced NGOS and funded by the government to conduct this community-based project because the NGOs have an extensive public connection in each district ( Environmental Protection Department, 2022). In addition, the Environmental Protection Department must maintain records of their performance via various methods (Environmental Protection Department, 2016). Every CGS operator is required to publish a quarterly report that summarises its educational and recycling service performance data. In addition, feedback from visitors and residents is gathered to assess the public's acceptance of CGS facilities and the community's satisfaction. On the basis of the findings, CGS operators will be required to make the recommendations and conduct follow-up. (Environmental Protection Department, 2016).

Furthermore, operational data is released to the public on a quarterly basis (HK EPD, 2016). The quarterly reports of each CGS are posted on each of their Facebook pages so that the public can easily view them. (GREEN@YUEN LONG (2023), GREEN@YUEN ONG HUI (2023), GREEN@LONG PING (2023)). The operation outcomes are the core of the report, which also details accomplishments during and after the reporting period. But some of the operational data from the CGSs were not found and updated yet (i.e., the fourth quarter of 2019 in GREEN@ YUEN LONG, the third quarter of 2022 in GREEN@YUEN LONG and GREEN@YUEN LONG HUI).

By analysing the operating data of the three CGSs in Yuen Long over the last twenty-three quarters, it is possible to statistically assess their performance . Regarding facility use, it was

determined that the GREEN@ YUEN LONG HUI got much more visits than the GREEN@ YUEN LONG and GREEN@ LONG PING. In the second quarter of 2022, the GREEN@ YUEN LONG HUI received approximately two times as many visitors as the GREEN@ YUEN LONG , which attracted just over 20,000 visitors ([Table 8.21](#)). This result showed that one of the key issues encountered by the GREEN@ YUEN LONG is to expand the visitor participation ([Appendix A](#)).

In terms of environment-educational service, tour, presentations, workshops are popular environment-educational activities offered by the three CGSs (GREEN@ YUEN LONG,2022). Each quarter's total number of environmental education activities and featured events is provided. The major activities include second hand market, which draws a large number of people in search of interesting books, toys, and fitting clothing. This encourages individuals to value their items and share them after using it, reducing waste.

Regarding the recyclable collection service, the three CGSs continue to construct networks with housing estates and institutions in their districts. Their services currently cover over 200 residential areas in Yuen Long Districts ([Table 8.21](#)). Prior to the first quarter of 2022, the GREEN@ YUEN LONG, GREEN@ YUEN LONG HUI and GREEN@ LONG PING had established 102,26 and 52 recycling spots, respectively ([Table 8.21](#) ). Those CGSs received around 300 tonnes of recyclables via different approaches ([Table 8.21](#)). The rising volume of recyclables indicates that the three CGSs play a crucial role in recycling collection at the district level.

### **3. Methodology**

#### **3.1.Questionnaire design**



A structured questionnaire was designed for the study, which is consisted of five parts: the first part included a series of question asking the residents' personal information such as LTR stations which is near their living areas and the type of accommodations, etc. The second part included questions that exploring the effective ways of knowing the CGSs and recycling education in Hong Kong. Questions in the third part were designed to explore the resident's views on CGSs operation who have visited CGSs in Yuen Long before. The fourth part include questions about the attitudes towards the waste reduction and their recycling behaviours. Questions in the fifth part were designed to ask the resident's knowledge about CGSs in Yuen Long. Random sampling was used to deliver written and online questionnaires to Yuen Long residents and CGSs visitors from 8 February to 1 March 2023. The questionnaire (Appendix B) was targeted at 200 visitors of the CGSs visitors and residents in Yuen Long in order to collect their views of CGSs, the publicity of CGSs and the attitude and knowledge toward the waste reduction and recycling service in Hong Kong. It was carried out at the exits of three CGSs in Yuen Long with a sample size of 200 in this district (Table 3.1). The research should engage several Yuen Long residents during distribution. Quantitative data were analysed using SPSS (version 28) after data collection. For data analysis, two major statistical analysis models were used: bivariate correlation and linear regression. Bivariate correlation was adapted for variables with a 5-point Likert scale (i.e., from strongly disagree to strongly agree). This can help to evaluate the variables that affect the publicity of CGSs and envrionment-educational in Hong Kong, the residents' views, and their attitudes toward the CGSs facilities. The linear regression can find the best quantitative dependent variable predictors. The significance level was set at 0.05 However, the objectives in the analysis was to focus on positive and negative relationships of independent variables on the dependent ones.

Table 3.1 sampling details of questionnaire

Locations	Format of questionnaire	Date	Time
-----------	-------------------------	------	------

GREEN@ LONG PING	Written questionnaires	13/2/2023	1430-1730
GREEN@YUEN LONG		25/2/2023	1330-1530
GREEN@ YUEN LONG HUI		25/2/2023	1630-1800
Instagram	Online questionnaire	8/2/2023; 9/2/2023. 17/2/2023; 25/2/2023	/

While completing out the survey that was directed at the residents, the participants were instructed to start with the compulsory questions first. Depending on their responses, they would be distributed to answer question continuously in Section 3 or skip to Section 4 respectively. The compulsory questions include three sections. Section 1 has seven questions which is about the demographic information ( i.e., gender, age, educational level, occupation, the nearby LRT stations, and the type of accommodations) of the participants. Then most of questions in section 2-4 adopted the Likert scale which residents and visitors need to rate their attitudes and behaviours in 1-5 from strongly disagree to strongly agree. Section 2 has six questions which focus on the ways of knowing CGSs and waste reduction and recycling knowledge in Hong Kong. Also, in this section, participants who claimed to have visited the CGSs in Yuen Long District were required to respond to the questions in Section 3; those who had not visited the CGSs were required to respond to the questions in Section 4. These six questions are used to examine the publicity and operation of CGSs in section 3. Section 4 includes seven questions that concentrate on the recycling behaviours and attitudes of residents and visitors, as well as their suggestions for CGSs. In section 5, there are two questions aimed to test the visitor's knowledge about CGSs in Yuen Long District.

### 3.2.Field visit

Field visits to the GREEN@ YUEN LONG were conducted on 15<sup>th</sup> February 25<sup>th</sup> February and 11<sup>th</sup> March, 2023. A field visit to the GREEN@YUEN LONG HUI was conducted on 25<sup>th</sup> February. And the field visit to the GREEN@ LONG PING was conducted on 1<sup>st</sup> March,2023. Before the field visit, research was conducted to gain basic understanding of the

stations, during the field visits, the focus was placed on the environment-educational facilities such as the poster and the waste recycling services. Visiting those stations on both weekdays and weekends might provide more information on the popularity of the CGSs. With the first-hand experiences, I can get more knowledge of the CGSs in Yuen Long and design relevant questions for the questionnaires.

## **4. Results**

### **4.1.Quantitative data - Questionnaire**

Questionnaires were delivered through Instagram and in hard copy on the street. Totally, 208 surveys were submitted by the visitors of the GREEN@YUEN LONG, GREEN@ YUEN LONG and GREEN@ LONG PING. With a confidence level of 85%, the sample size for the visitor sector was relatively small compared to the resident population of Yuen Long, which consists of 662 thousand (Social Welfare Department, 2021) since there was a smaller available target audience. There were 136 female ,59 males and 13 who answered ‘not applicable’ participated in the survey, representing 65.4%,28.4 and 6.3% respectively. In the six age groups (i.e., 18 or below, 19-25, 26-35,36-50,51-64 and 65 or above), the majority of participants ( 51.1%)were between the ages of 18 or below and 36-50. About the education level, approximately half of the participants (45%) has completed secondary school, while the other half had a foundation diploma/associate degree /higher diploma or more. For the nearby LRT stops, most of the participants (34.2%) live near Yuen Long station and Fung Nin Road stop among 25 LRT stops in Yuen Long District (Figure 4.1). In the nine occupations ( i.e., student, education, freelance, retired, business, civil servant, healthcare industry, service industry), the majority of participants (36.1%) were student. About the monthly income, approximately a quarter of participants earned \$10000 or below monthly while the other a quarter earned \$10001 or more. Moreover, some participants (24.5%) refused to declare their salary. In the three types of housings ( i.e., public housing, HOS, and private housing), over half of the participants ( 61.6%) live in private housing. Detail of the demographic characteristics can be referred to Table 4.1.

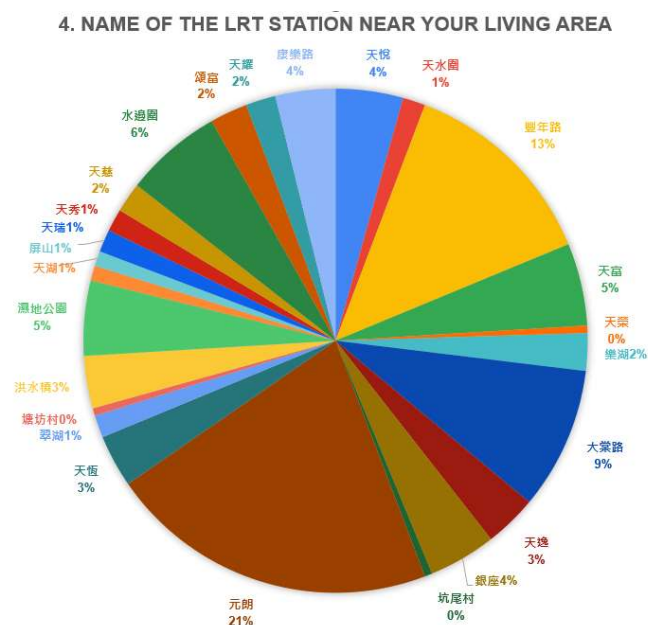
**Table 4.1** Demographic characteristics of the participants

**Residents of Yuen Long District**

		No.	Percentage (%)
<b>Gender</b>			
	Male	59	28.4
	Female	136	65.4
	Not applicable	13	6.3
<b>Age</b>			
	18 or below	56	26.9
	19-25	33	15.9
	26-35	27	13
	36-50	42	20.2
	51-64	34	16.3
	65 or above	16	7.7
<b>Education</b>			
<b>level</b>	Primary school or below	14	6.7
	Secondary school	95	45.7
	Foundation Diploma/Associate	33	15.9
	Degree /Higher Diploma		
	Bachelor's degree	54	26
	Master's degree or above	12	5.8
<b>Occupation</b>			
	Student		36.1
	Education	18	8.7
	Business	27	13
	Civil servant	13	6.3
	Healthcare industry	15	7.2
	Service industry	18	8.7

	Retired	181	8.7
	Freelance	12	5.8
	Others	12	5.8
<b>Monthly</b>			
<b>income</b>	\$10000 or below	63	30.3
<b>(HKD\$)</b>	\$10001- 19999	35	16.8
	\$20000-29999	24	11.5
	\$30000-40000	22	10.6
	\$50000 or above	13	6.3
	Prefer not to answer	51	24.5
<b>Housing</b>			
	Public rental housings	52	25
	Home Ownership housings	28	13.5
	Private housings	128	61.6

Figure 4.1. Pie chart showing the distribution of the LRT stations near the participants.



## Ways of knowing CGSs and waste reduction and recycling knowledge in Hong Kong

To get a basic understanding of each visitor's visit to the three CGSs in Yuen Long District (i.e., Q8-13), six questions were asked. At first, a question was asked to know what effective ways of information that the participants can learn about the waste reduction and recycling knowledge in Hong Kong in the Likert scale which would be analysed with the demographic data. Second, a question was asked whether the participants were familiar with the CGSs in Yuen Long District. Then, the participants were asked how likely they are willing to visit the CGSs after having a brief introduction to them. Next, a question was asked to know what effective ways of information that the participants can know about the CGSs in Hong Kong in the Likert scale which would be analysed with the demographic data. In the last, there are two questions were asked to know where the participants knew the locations of the CGSs in Yuen Long District and have been one or more of the CGSs and recycling spots organised in Yuen Long.

*Q8. How did you learn about the knowledge of Reduce and Recycle/ Waste Reduction more effectively ?*

First, a Pearson correlation coefficient was performed to evaluate the relationship between demographic characteristics and the effective ways of learning about the reduction and recycling/ waste reduction (Table 4.2). There was a significant weak negative relationship between “occupation” and “learning about the reduction and recycling/ waste reduction effectively is from school”,  $r ([206]) = -.138, p = [<0.05]$ . Also, there was a significant weak negative relationship between “type of housing” and “learning about the reduction and recycling/ waste reduction effectively is from school”,  $r ([206]) = -.167, p = [<0.05]$

However, in linear regression, occupation and type of housing do not affect the learning about the reduction and recycling/ waste reduction effectively is from school (Table 4.3). The result demonstrated that the occupation ( $B = -.85, t = -2.077, p = 0.39$ ) and type of housing ( $B = -.174, t = -2.137, p = 0.34$ ) do not have significant impact on the learning about the reduction and recycling/ waste reduction effectively is from school.

Table 4.2 Personal correlation coefficient showing the relationship between the demographic characteristics of the participants and the effective ways of learning about the reduction and recycling/ waste reduction.

Correlations								
		8. 你認為你從 哪種途徑能更 有效認識到減廢回 收？ [a. 學校]	8. 你認為你從 哪種途徑能更 有效認識到減廢回 收？ [b. 電台廣 播]	8. 你認為你從 哪種途徑能更 有效認識到減廢回 收？ [c. 電視]	8. 你認為你從 哪種途徑能更 有效認識到減廢回 收？ [d. 網站 和社交媒體]	8. 你認為你從 哪種途徑能更 有效認識到減廢回 收？ [e. 報紙和 雜誌]	8. 你認為你從 哪種途徑能更 有效認識到減廢回 收？ [f. 廣告、 手冊和海報]	8. 你認為你從 哪種途徑能更 有效認識到減廢回 收？ [g. 家人、 鄰居、朋友和同 事]
1. 性別	Pearson Correlation	-.085	.016	-.030	-.134	-.052	.045	.046
	Sig. (2-tailed)	.222	.813	.671	.054	.452	.517	.514
	N	208	208	208	208	208	208	208
2. 年齡	Pearson Correlation	-.044	.173*	.184**	.045	.154*	.123	.135
	Sig. (2-tailed)	.530	.012	.008	.520	.027	.078	.053
	N	208	208	208	208	208	208	208
3. 教育程度	Pearson Correlation	-.003	-.062	-.050	.073	.050	.030	.037
	Sig. (2-tailed)	.969	.375	.470	.294	.472	.671	.599
	N	208	208	208	208	208	208	208
5. 職業	Pearson Correlation	-.138*	.129	.154*	-.012	.078	.054	.024
	Sig. (2-tailed)	.048	.064	.026	.866	.265	.436	.735
	N	208	208	208	208	208	208	208
6. 每月港幣收入	Pearson Correlation	.019	.245**	.122	.061	.072	.055	.070
	Sig. (2-tailed)	.783	<.001	.079	.378	.299	.431	.315
	N	208	208	208	208	208	208	208
7. 居住單位類型	Pearson Correlation	-.167*	.072	-.010	-.084	.034	-.041	.020
	Sig. (2-tailed)	.016	.300	.885	.226	.628	.553	.777
	N	208	208	208	208	208	208	208

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 4.3 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about the reduction and recycling/ waste reduction from school.

Coefficients <sup>a</sup>					
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	4.555	.351		12.981
	1. 性別	-.154	.127	-.083	-1.214
	2. 年齡	.088	.066	.146	1.339
	3. 教育程度	-.016	.067	-.018	-.244
	5. 職業	-.085	.041	-.225	-2.077
	6. 每月港幣收入	.031	.037	.060	.833
	7. 居住單位類型	-.174	.081	-.154	-2.137

a. Dependent Variable: 8. 你認為你從哪種途徑能更有效認識到減廢回收？ [a. 學校]

Second, there was a significant weak positive relationship between “age” and “learning about the reduction and recycling/ waste reduction effectively is from radio”,  $r([206]) = [.173]$ ,  $p=[<0.05]$ . Also, there was a significant weak positive relationship between “monthly income” and “learning about the reduction and recycling/ waste reduction effectively is from radio”,  $r([206]) = [.245]$ ,  $p=[<0.05]$  (Table 4.2).

However, A simple linear regression was calculated to predict learning about the reduction and recycling/ waste reduction effectively is from radio only based on monthly income (Table



4.4). A significant regression equation was found ( $F(6,201)=3.039, p<0.07$ ), with an  $R^2$  of .083. participants' predicted weight is equal to  $2.926+.129$  (monthly income)performance when the learning about the reduction and recycling/ waste reduction effectively is from radio is measured in ten thousand dollars. Learning about the reduction and recycling/ waste reduction effectively is from radio increased .129 for each ten thousand dollars of monthly income.

Table 4.4 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about the reduction and recycling/ waste reduction from radio.

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.826	.396		7.134	<.001
	1. 性別	.011	.144	.005	.073	.942
	2. 年齡	.108	.075	.156	1.448	.149
	3. 教育程度	-.118	.076	-.111	-1.562	.120
	5. 職業	-.022	.046	-.052	-.482	.630
	6. 每月港幣收入	.129	.042	.220	3.091	.002
	7. 居住單位類型	.037	.092	.028	.399	.691

a. Dependent Variable: 8. 你認為你從哪種途徑能更有效認識到減廢回收？ [b. 電台廣播]

Third, there was a significant weak positive relationship between “age” and “learning about the reduction and recycling/ waste reduction effectively is from TV”,  $r([206]) = [.184]$ ,  $p=[<0.05]$  (Table 4.2). Also, there was a significant weak positive relationship between “occupation” and “learning about the reduction and recycling/ waste reduction effectively is from TV”,  $r([206]) = [.154]$ ,  $p=[<0.05]$ .

However, in linear regression, occupation and age do not affect the learning about the reduction and recycling/ waste reduction effectively is from TV (Table 4.5). The result demonstrated that the occupation ( $B=-.007, t=.171, p=.864$ ) and age ( $B=-.063, t=-.512, p=.609$ ) do not have significant impact on the learning about the reduction and recycling/ waste reduction effectively is from school.

Table 4.5 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about the reduction and recycling/ waste reduction from TV.

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.768	.341		11.035
	1. 性別	-.063	.124	-.035	-.512
	2. 年齡	.097	.064	.165	1.504
	3. 教育程度	-.062	.065	-.069	-.955
	5. 職業	.007	.040	.019	.171
	6. 每月港幣收入	.045	.036	.090	1.249
	7. 居住單位類型	-.061	.079	-.056	-.773

a. Dependent Variable: 8. 你認為你從哪種途徑能更有效認識到減廢回收？ [c. 電視]

Forth, there was a significant weak positive relationship between “age” and “learning about the reduction and recycling/ waste reduction effectively is from the newspaper and magazine”,  $r([206]) = [.154]$ ,  $p = [<0.05]$  (Table 4.2).

However, in linear regression, age does not affect the learning about the reduction and recycling/ waste reduction effectively is from the newspaper and magazine (Table 4.6). The result demonstrated that the occupation ( $B = -.141, t = 1.859, p = 0.065$ ) does not have significant impact on the learning about the reduction and recycling/ waste reduction effectively is from the newspaper and magazine.

Table 4.6 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about the reduction and recycling/ waste reduction from newspaper and magazine.

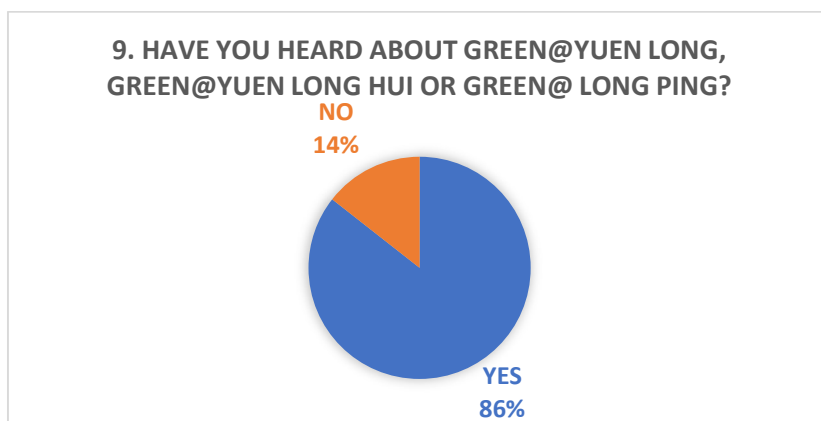
Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.000	.404		7.428
	1. 性別	-.108	.146	-.052	-.741
	2. 年齡	.141	.076	.205	1.859
	3. 教育程度	.019	.077	.018	.248
	5. 職業	-.036	.047	-.083	-.754
	6. 每月港幣收入	.019	.042	.033	.452
	7. 居住單位類型	-.002	.094	-.001	-.018

a. Dependent Variable: 8. 你認為你從哪種途徑能更有效認識到減廢回收？ [e. 報紙和雜誌]

Q9. Have you heard about GREEN@YUEN LONG, GREEN@YUEN LONG HUI and GREEN@ LONG PING?

In 208 participants living in Yuen Long district, 178 of them claimed they have heard about GREEN@YUEN LONG, GREEN@YUEN LONG HUI or GREEN@ LONG PING, which accounted for 86% of the participants, which was the majority ( Figure 4.2).

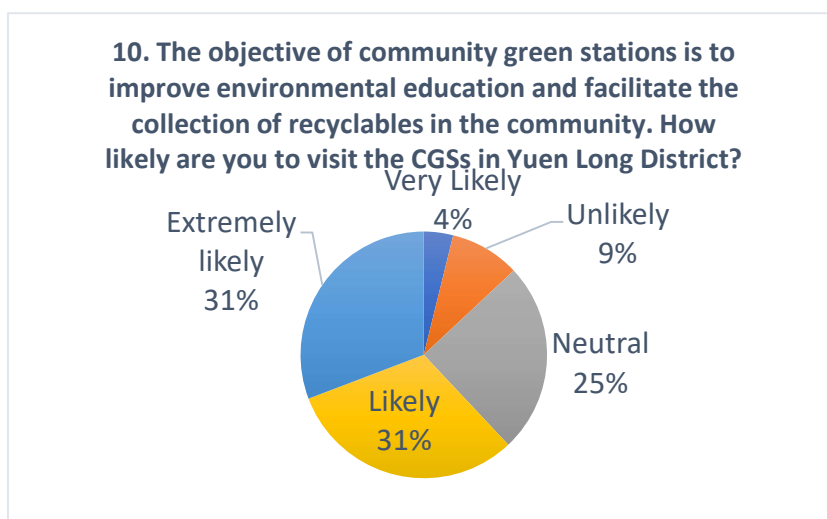
Figure 4.2 Pie chart showing whether the participants have heard about the GREEN@YUEN LONG, GREEN@YUEN LONG HUI and GREEN@ LONG PING



*Q10. The objectives of community green stations are to improve environment-educational and facilitate recycling collection in the community. How likely are you to visit the CGSs in Yuen Long District?*

There were about 62% of participants ( i.e., 129 out of 208 participants) stated that they were likely or very likely to visit after a brief introduction of the CGSs in Yuen Long District ( Figure 4.3).

Figure 4.3 Pie chart showing how likely they would go to CGSs in Yuen Long District



First, a Pearson correlation coefficient was shown to evaluate the relationship between ‘demographic characteristics’ and ‘the likely to visit CGSs in Yuen Long District’ (Table 4.7) . There was a significant weak positive relationship between “age” and “the likely to visit CGSs in Yuen Long District ([205]) = [.241] ,  $p=[<0.01]$ .Also, there was a significant weak positive relationship between “occupation” and “the likely to visit CGSs in Yuen Long District”.  $r$  ([205]) = [.224],  $p=[<0.01]$  while there was a significant weak positive relationship between “occupation” and “the likely to visit CGSs in Yuen Long District”.  $r$  ([205]) = [.249],  $p=[<0.01]$ .

However, A simple linear regression was calculated to predict the likely to visit CGSs in Yuen Long District only based on monthly income (Table 4.8). A significant regression equation was found ( $F(6,200)=4.250, p<0.01$  ),with an  $R^2$  of .113 . participants’ predicted weight is equal to  $3.374+.108$  (monthly income)performance the likely to visit CGSs in Yuen Long District is measured in ten thousand dollars. The likely to visit CGSs in Yuen Long District increased .108 for each ten thousand dollars of monthly income.

Table 4.7 Personal correlation coefficient showing the relationship between the demographic characteristics of the participants and their willingness to visit CGSs in Yuen Long District.

10. 綠在區區旨在加強社區的減廢教育和回收習慣。你有多大可能會去綠在區區？

1. 性別	Pearson Correlation	-.093
	Sig. (2-tailed)	.182
	N	207
2. 年齡	Pearson Correlation	.241**
	Sig. (2-tailed)	<.001
	N	207
3. 教育程度	Pearson Correlation	.000
	Sig. (2-tailed)	1.000
	N	207
5. 職業	Pearson Correlation	.224**
	Sig. (2-tailed)	.001
	N	207
6. 每月港幣收入	Pearson Correlation	.249**
	Sig. (2-tailed)	<.001
	N	207
7. 居住單位類型	Pearson Correlation	.132
	Sig. (2-tailed)	.057
	N	207

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Table 4.8 Linear regression showing the relationship between the demographic characteristics of the participants and their willingness to visit CGSs in Yuen Long District.

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.374	.367		<.001
	1. 性別	-.207	.133	-.104	.120
	2. 年齡	.080	.069	.123	.246
	3. 教育程度	-.043	.070	-.043	.537
	5. 職業	.029	.043	.072	.492
	6. 每月港幣收入	.108	.039	.197	.005
	7. 居住單位類型	.078	.085	.064	.363

a. Dependent Variable: 10. 綠在區區旨在加強社區的減廢教育和回收習慣。你有多大可能會去綠在區區？

#### Q11. How did you learn about the CGSs in Hong Kong more effectively ?

First, a Pearson correlation coefficient was performed to evaluate the relationship between demographic characteristics and the effective ways of learning about CGSs in Hong Kong (Table 4.9). There was a significant weak positive relationship between “age” and “effective ways of learning about CGSs in Hong Kong is from radio”,  $r ([206]) = .195, p = [ < 0.05 ]$ . Also, there was a significant weak positive relationship between “occupation” and “effective ways of learning about CGSs in Hong Kong is from radio”,  $r ([206]) = .137, p = [ < 0.05 ]$  while , there was a significant weak positive relationship between “monthly income” and “effective ways of learning about CGSs in Hong Kong is from radio”,  $r ([206]) = .207, p = [ < 0.05 ]$

However, in linear regression, age, occupation, and monthly income do not affect the effective ways of learning about CGSs in Hong Kong is from radio (Table 4.10). The result demonstrated that the age ( $B = .153, t = 1.810, p = 0.72$ ) occupation ( $B = -.22, t = -417, p = .677$ ) and monthly income ( $B = .118, t = 2.499, p = 0.13$ ) do not have significant impact on the effective ways of learning about CGSs in Hong Kong is from radio.

Table 4.9 Personal correlation coefficient showing the relationship between the demographic characteristics of the participants and the effective ways of learning about CGSs in Hong Kong.

		11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [a. 學校]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [b. 電台廣播]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [c. 電視]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [d. 網站和社交媒體]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [e. 報紙和雜誌]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [f. 廣告、手冊和海報]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [g. 家人、鄰居、朋友和同學]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [h. 回收活動/環保2活動]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [i. 回收活動/環保2活動]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [j. 從不]	11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案） [k. 其他，請註明（如沒有，請選擇“6”）]
1. 性別	Pearson Correlation	-.053	-.039	-.007	-.002	.028	.066	.000	-.025	.036	-.077	-.019
	Sig. (2-tailed)	.444	.580	.923	.971	.692	.344	.996	.721	.607	.269	.786
	N	208	208	208	208	208	208	208	208	208	208	208
2. 年齡	Pearson Correlation	.055	.195**	.176*	-.010	.091	.112	.193**	.151*	.093	.197**	.124
	Sig. (2-tailed)	.430	.005	.011	.881	.193	.107	.005	.030	.182	.004	.075
	N	208	208	208	208	208	208	208	208	208	208	208
3. 教育程度	Pearson Correlation	-.061	-.030	-.009	.058	.027	.043	.035	.120	-.011	-.044	-.019
	Sig. (2-tailed)	.378	.663	.892	.402	.693	.534	.617	.085	.873	.532	.786
	N	208	208	208	208	208	208	208	208	208	208	208
5. 職業	Pearson Correlation	-.032	.137*	.092	-.050	.056	.076	.131	.098	.058	.123	.048
	Sig. (2-tailed)	.648	.049	.184	.470	.423	.273	.060	.158	.406	.077	.488
	N	208	208	208	208	208	208	208	208	208	208	208
6. 每月港幣收入	Pearson Correlation	-.017	.207**	.092	-.011	.016	.112	.125	-.003	.086	.079	.038
	Sig. (2-tailed)	.808	.003	.184	.874	.823	.109	.072	.965	.216	.254	.589
	N	208	208	208	208	208	208	208	208	208	208	208

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 4.10 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about CGSs in Hong Kong is from radio.

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.013	.449		<.001
	1. 性別	-.111	.163	-.047	.495
	2. 年齡	.153	.085	.196	.072
	3. 教育程度	-.083	.086	-.069	.334
	5. 職業	-.022	.052	-.045	.677
	6. 每月港幣收入	.118	.047	.179	.013
	7. 居住單位類型	-.061	.104	-.042	.560

a. Dependent Variable: 11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案）  
[b. 電台廣播]

Second, there was a significant weak positive relationship between “age” and “effective ways of learning about CGSs in Hong Kong is from TV”,  $r$  ([206]) = .176,  $p$  = [ $<0.05$ ] (Table 4.9). However, in linear regression, age does not affect the effective ways of learning about CGSs in Hong Kong is from TV (Table 4.11). The result demonstrated that the age ( $B$  = .182,  $t$  = 2.280,  $p$  = 0.24) does not have significant impact on the effective ways of learning about CGSs in Hong Kong is from TV.

Table 4.11 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about CGSs in Hong Kong is from TV.



		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3.414	.423		8.071	<.001
	1. 性別	-.019	.153	-.009	-.124	.901
	2. 年齡	.182	.080	.251	2.280	.024
	3. 教育程度	-.050	.081	-.045	-.623	.534
	5. 職業	-.048	.049	-.107	-.978	.329
	6. 每月港幣收入	.034	.044	.055	.757	.450
	7. 居住單位類型	-.031	.098	-.023	-.314	.754

a. Dependent Variable: 11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案）  
[c. 電視]

Third, there was a significant weak positive relationship between “age” and “effective ways of learning about CGSs in Hong Kong is from family, neighbours, friends, and colleagues”,  $r$  ([206]) = .193,  $p$  = [ $<0.05$ ] (Table 4.9).

However, in linear regression, age does not affect the effective ways of learning about CGSs in Hong Kong is from family, neighbours, friends, and colleagues (Table 4.12). The result demonstrated that the age ( $B$  = .140,  $t$  = 1.800,  $p$  = 0.73) does not have significant impact on the effective ways of learning about CGSs in Hong Kong is from family, neighbours, friends, and colleagues.

Table 4.12 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about CGSs in Hong Kong is from family, neighbours, friends, and colleagues.

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3.257	.412		7.897	<.001
	1. 性別	-.003	.149	-.002	-.023	.982
	2. 年齡	.140	.078	.198	1.800	.073
	3. 教育程度	.003	.079	.003	.042	.967
	5. 職業	-.016	.048	-.036	-.330	.742
	6. 每月港幣收入	.046	.043	.077	1.059	.291
	7. 居住單位類型	.003	.096	.002	.027	.979

a. Dependent Variable: 11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案）  
[g. 家人、鄰居、朋友和同事]

Fourth, there was a significant weak positive relationship between “age” and “effective ways of learning about CGSs in Hong Kong is pass by”,  $r$  ([206]) = .151,  $p$  = [ $<0.05$ ] (Table 4.9).

However, in linear regression, age does not affect the effective ways of learning about CGSs in Hong Kong is pass by (Table 4.13). The result demonstrated that the age ( $B=.105, t=1.423, p=.156$ ) does not have significant impact on the effective ways of learning about CGSs in Hong Kong is pass by.

Table 4.13 Linear regression showing the relationship between the demographic characteristics of the participants and the effective ways of learning about CGSs in Hong Kong is pass by.

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.413	.392		<.001
	1. 性別	-.037	.142	-.018	.797
	2. 年齡	.105	.074	.156	.156
	3. 教育程度	.125	.075	.121	.097
	5. 職業	.007	.046	.016	.885
	6. 每月港幣收入	-.029	.041	-.051	.482
	7. 居住單位類型	-.089	.091	-.071	.330

a. Dependent Variable: 11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案）  
[h. 路過]

Fifth, a Pearson correlation coefficient was performed to evaluate the relationship between demographic characteristics and the effective ways of learning about CGSs in Hong Kong (Table 4.9). There was a significant weak positive relationship between “age” and “there is no effective ways of learning about CGSs in Hong Kong”,  $r ([206]) = .197, p = [ < 0.05 ]$ .

However, in linear regression, age does not affect ‘there is no effective ways of learning about CGSs in Hong Kong’ (Table 4.14). The result demonstrated that the age ( $B=.270, t=2.406, p=.017$ ) does not have significant impact on ‘there is no effective ways of learning about CGSs in Hong Kong’.

Table 4.14 Linear regression showing the relationship between the demographic characteristics of the participants and there are no effective ways of learning about CGSs in Hong Kong.



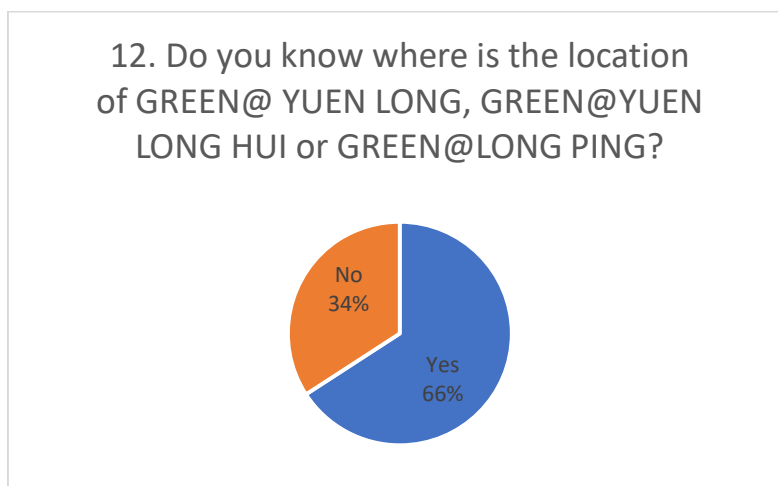
Coefficients <sup>a</sup>						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.996	.595		8.391	<.001
	1. 性別	-.252	.216	-.080	-1.166	.245
	2. 年齡	.270	.112	.263	2.406	.017
	3. 教育程度	-.126	.114	-.080	-1.110	.268
	5. 職業	-.053	.069	-.083	-.763	.446
	6. 每月港幣收入	.035	.063	.040	.558	.578
	7. 居住單位類型	-.047	.138	-.025	-.342	.733

a. Dependent Variable: 11. 你從以下哪種途徑得知綠在區區的相關資訊？（可以選擇多項答案）  
從不]

Q12. Do you know where is the location of GREEN@ YUEN LONG, GREEN@YUEN LONG HUI or GREEN@LONG PING?

Up to 65.9% of the participants knew the location of GREEN@ YUEN LONG, GREEN@YUEN LONG HUI or GREEN@LONG PING, which was the majority (Figure 4.4).

Figure 4.4 Pie chart showing whether residents and visitors know the location of GREEN@ YUEN LONG, GREEN@YUEN LONG HUI or GREEN@LONG PING

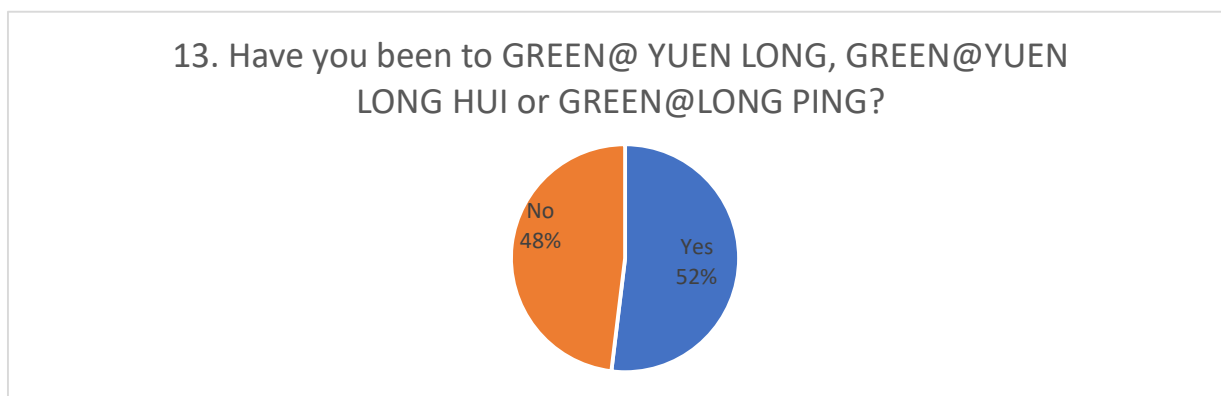


Q13. Have you been to GREEN@ YUEN LONG, GREEN@YUEN LONG HUI or GREEN@LONG PING?

Among 108 participants participated in this survey, 108 of them have been to GREEN@ YUEN LONG, GREEN@YUEN LONG HUI or GREEN@LONG PING, which accounted for around 52% of the participants (Figure 4.5). participants who answered 'Yes' would

continue to answer to remaining questions while participants who answered 'No' would skip to answer the question in Section 4.

Figure 4.5 Pie chart showing whether residents and visitors have been to GREEN@ YUEN LONG, GREEN@YUEN LONG HUI or GREEN@LONG PING



#### Views towards the CGSs in Yuen Long District

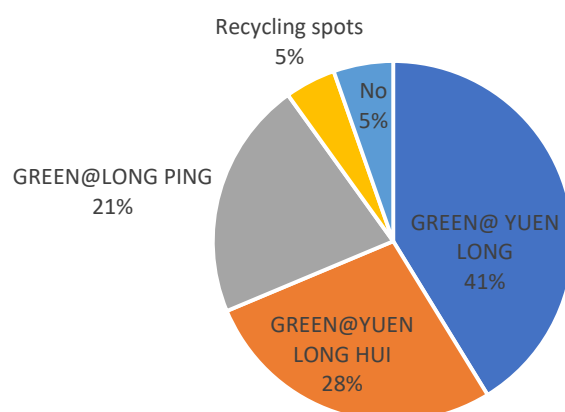
Five questions were asked to determine visitor's motivations for visiting the CGSs in the Yuen Long District (i.e. Q14-19), which included (1) which CGSs in Yuen Long District that the participants usually visit; (2) the motivations why participants would visit CGS; (3) The frequency with which participants visit CGSs (including recycling locations) in Yuen Long District; (4) the reason that attract participants to take action in recycling; and (5) The factors that attract the participants to visit the CGSs in Yuen Long District more frequently.

*Q14. Which CGSs in Yuen Long District do you usually go? (Can choose more than 1)*

Among the 108 participants that have been to CGSs in Yuen Long District, the majority people usually go to GREEN@YUEN LONG (41%), while 28% of them go to GREEN@YUEN LONG HUI. GREEN@LONG PING is the third most popular with 21% of them going there. Only a small percentage of visitors and residents (5%) visit the recycling spots.

Figure 4.6 Pie chart showing which CGSs in Yuen Long District that residents and visitors usually go.

14. Which CGSs in Yuen Long District do you usually go? (Can choose more than 1)



Q15. Which of the following statements that would describe the reason of you to go to CGSs?

In Q15, four reasons of visiting CGSs were examined, including the location of CGSs and personal preference. Participants were required to evaluate the provided reasons using a five-point Likert scale (strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5). The four reasons' means and standard deviations are shown in Table 4.15. (i.e., a-d). A large standard deviation (i.e., greater than 1) was presented, indicating that the data set was dispersed over a larger range from the means.

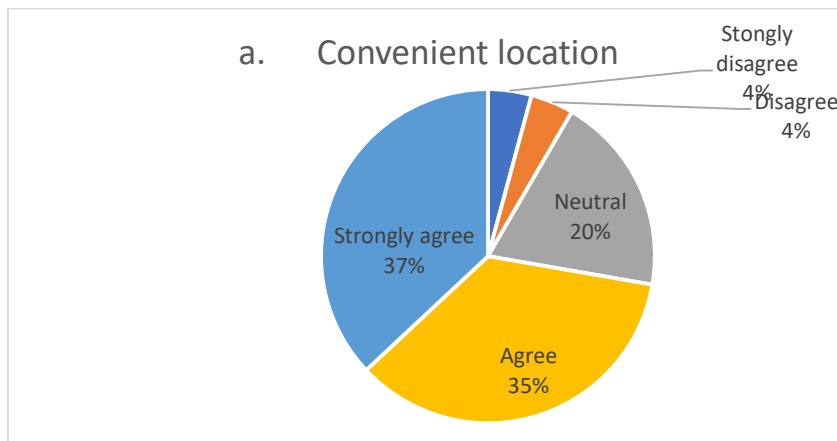
Table 4.15 Means and Standard Deviations for reason of going to CGSs.

	Mean	Std. Deviation
a. Convenient location	3.98	1.069
b. I am interested in environmental protection issues	4.11	0.848
c. I want to participate the environment-educational events.	3.67	0.991
d. I am looking for suitable second-hand items.	3.14	1.178

a. Convenient location

77 out of 108 participants agreed or strongly agreed that they went to the CGSs because the location of the CGSs was convenient and accessible (Figure 4.7). The same conclusion was drawn based on the mean score of 3.98 (Table 4.15).

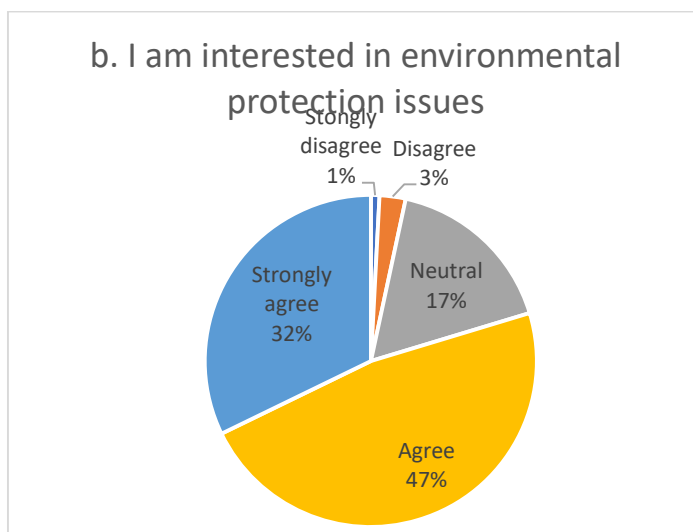
Figure 4.7 Pie chart showing the participants went to the CGSs because the location of the CGSs was convenient and accessible.



b. I am interested in environmental protection issues.

Nearly 80% of participants agreed or strongly agreed that they went to the CGSs because they were interested in environmental protection issues (Figure 4.8). The mean score of 4.11 showed that the participants preferred to know more environmental protection issues (Table 4.15).

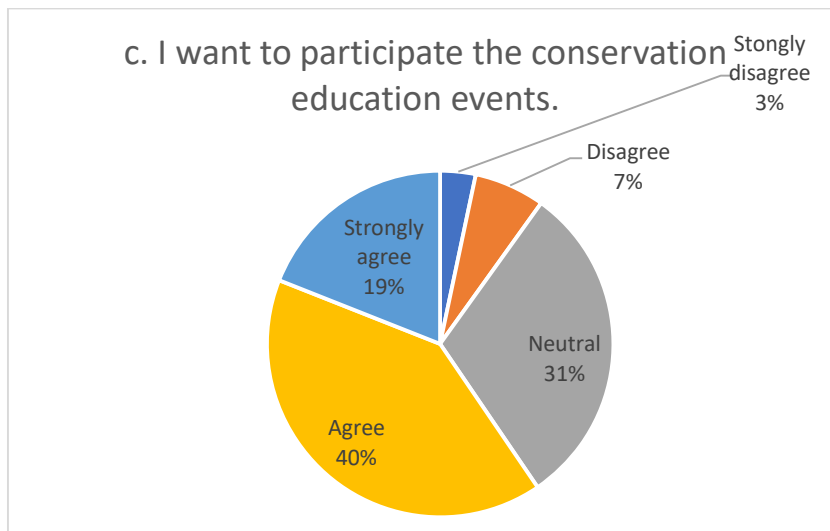
Figure 4.8 Pie chart showing the participants went to the CGSs because they were interested in environmental protection issues.



c. I want to participate the environment-educational events.

40% of participants agreed that they went to the CGSs because they wanted to participant the envrionment-educational events (Figure 4.9). The mean score of 3.67 showed that the participants had interests in join envrionment-educational events ([Table 4.15](#)).

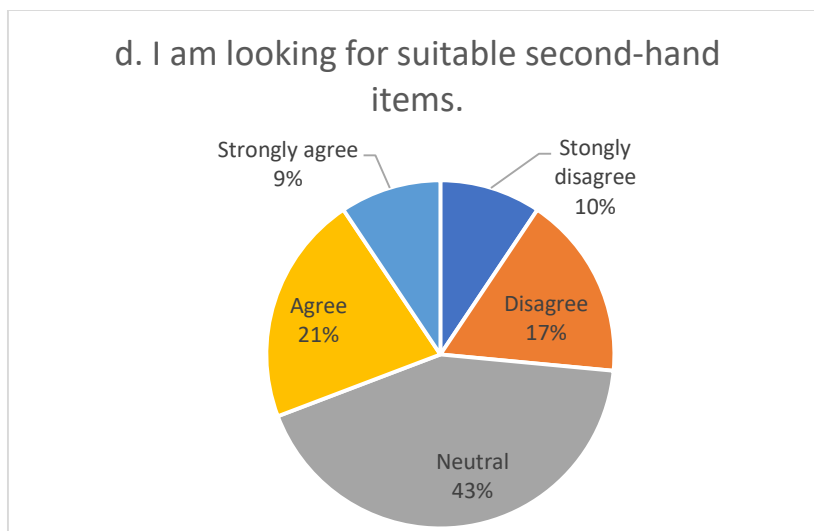
Figure 4.9 Pie chart showing the participants went to the CGSs because they wanted to participant the envrionment-educational events.



d. I am looking for suitable second-hand items.

27% of the participants disagreed or strongly disagree that they went to CGS because they wanted to look for suitable second-hand items and 43% of them thought that was neutral (Figure 4.10). The average score of 3.14 indicated that the searching for second-hand items were barely above neutral (Table 4.15).

Figure 4.10 Pie chart showing the participants went to the CGSs because they wanted to look for suitable second-hand items.

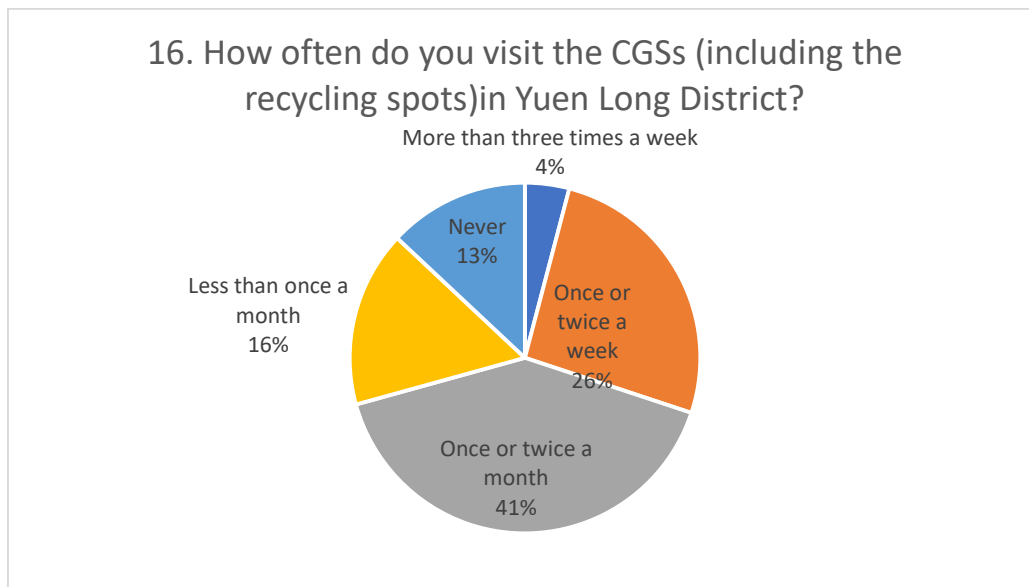


*Q16 . How often do you visit the CGSs (including the recycling spots)in Yuen Long District?*

The largest portion reported the participants visit the CGSs once or twice a month (41%).

26% of participants visit once or twice a week, while 16% of them visit less than once a month. Only a small portion of them visit more than three times a week (Figure 4.11).

Figure 4.11 Pie chart showing the frequentness that the participants visit the CGSs (including the recycling spots)in Yuen Long District



*Q17. Which of the following statements that would describe the reason of you take action in recycling?*

Frist, A Pearson correlation coefficient was performed to evaluate the relationship between demographic characteristics and the reason of participants take action in recycling (Table 4.16). There was a significant moderate positive relationship between age and ‘the reason of participants take action in recycling is reducing the problems of landfill saturation’,  $r([117]) = .314$ ,  $p = [<.001]$ .

Also, A simple linear regression was calculated to predict ‘the reason of participants take action in recycling is reducing the problems of landfill saturation’ based on age . A significant regression equation was found ( $F(6,112)=2.901, p<.011$ ), with an  $R^2$  of .135. Respondents’ predicted weight is equal to  $3.606 + .190(\text{age})$  ‘the reason of participants take action in recycling is reducing the problems of landfill saturation’ when (age) reason is measured in years old. Reducing the problems of landfill saturation increased \_for each .190 years old of age (Table 4.17).

Table 4.16 Personal correlation coefficient showing the relationship between the demographic characteristics of the participants and the reason of participants take action in recycling.

		17 為什麼你會參與回收？[a. 提高環保意識]	17 為什麼你會參與回收？[b. 位置便利(回收環保站和回收流動點)]	17 為什麼你會參與回收？[c. 設施改善]	17 為什麼你會參與回收？[d. 減少堆填區飽滿問題]	17 為什麼你會參與回收？[e. 知道如何分類回收]	17 為什麼你會參與回收？[f. 其他(如沒有，請選擇“6”) ]
1. 性別	Pearson Correlation	-.017	.057	-.069	.041	.013	-.033
	Sig. (2-tailed)	.855	.535	.452	.659	.883	.737
	N	119	120	122	119	121	108
2. 年齡	Pearson Correlation	.113	.109	.082	.314**	.215*	.287**
	Sig. (2-tailed)	.219	.238	.368	<.001	.018	.003
	N	119	120	122	119	121	108
3. 教育程度	Pearson Correlation	.034	.120	.035	.107	.171	.145
	Sig. (2-tailed)	.710	.191	.703	.247	.061	.134
	N	119	120	122	119	121	108
5. 職業	Pearson Correlation	.017	.034	.048	.159	.174	.157
	Sig. (2-tailed)	.858	.714	.600	.085	.056	.105
	N	119	120	122	119	121	108
6. 每月港幣收入	Pearson Correlation	.112	-.034	.095	.174	.236**	.021
	Sig. (2-tailed)	.226	.711	.297	.059	.009	.831
	N	119	120	122	119	121	108

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Table 4.17 Linear regression showing the relationship between the demographic characteristics of the participants and the reason of participants take action in recycling is reducing the problems of landfill saturation.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.606	.343		10.510	<.001
	1. 性別	.021	.124	.015	.167	.867
	2. 年齡	.190	.065	.380	2.920	.004
	3. 教育程度	.069	.067	.099	1.026	.307
	5. 職業	-.027	.041	-.089	-.652	.516
	6. 每月港幣收入	.049	.038	.117	1.299	.197
	7. 居住單位類型	-.079	.092	-.085	-.866	.388

a. Dependent Variable: 17 為什麼你會參與回收？[d. 減少堆填區飽滿問題]

Then, there was a significant weak positive relationship between age and ‘the reason of participants take action in recycling is knowing how to do waste separation and recycling properly’,  $r([119]) = .215$ ,  $p = [0.05]$  (Table 4.16). And there was a significant weak positive relationship between monthly income and ‘the reason of participants take action in recycling is knowing how to do waste separation and recycling properly’,  $r([119]) = .236$ ,  $p = [<0.01]$ . However, in linear regression, age and monthly income do not affect ‘the reason of participants take action in recycling is knowing how to do waste separation and recycling properly’ (Table 4.18). The result demonstrated that the age ( $B=.058, t=.938, p=.350$ ) and monthly income ( $B=.074, t=2.079, p=.040$ ) do not have significant impact on ‘the reason of

participants take action in recycling is knowing how to do waste separation and recycling properly’.

Table 4.18 Linear regression showing the relationship between the demographic characteristics of the participants and the reason of participants take action in recycling is knowing how to do waste separation and recycling properly.

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.591	.327		10.986
	1. 性別	-.017	.119	-.013	-.146
	2. 年齡	.058	.062	.122	.938
	3. 教育程度	.126	.064	.192	1.983
	5. 職業	.036	.039	.125	.916
	6. 每月港幣收入	.074	.036	.188	2.079
	7. 居住單位類型	-.075	.086	-.084	-.864

a. Dependent Variable: 17 為什麼你會參與回收？ [e. 知道如何分類回收]

*Q18. What will attract you to visit the CGSs in Yuen Long District more frequently?*

In Q18, seven attractions of visiting CGSs in Yuen Long District were examined, including recycling bins, exhibits, facilities, events, locations, incentives, belief of proper waste treatment. Participants were required to evaluate the provided attractions using a five-point Likert scale (strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5). The seven attractions' means and standard deviations are shown in Table 4.19 (i.e., a-g). A large standard deviation (i.e., greater than 1) was presented, indicating that the data set was dispersed over a larger range from the means.

Table 4.19 Means and Standard Deviations for reason of going to CGSs.

	Mean	SD
a. Provide more recycling bins for more recyclables	4.16	0.913
b. have more exhibits of environment-educational	3.57	1.02
c. have more facilities of environment-educational	3.67	1.012
d. have more events of environmental education	3.77	1.047
e. Had a more accessible and convenient place	4.38	0.948



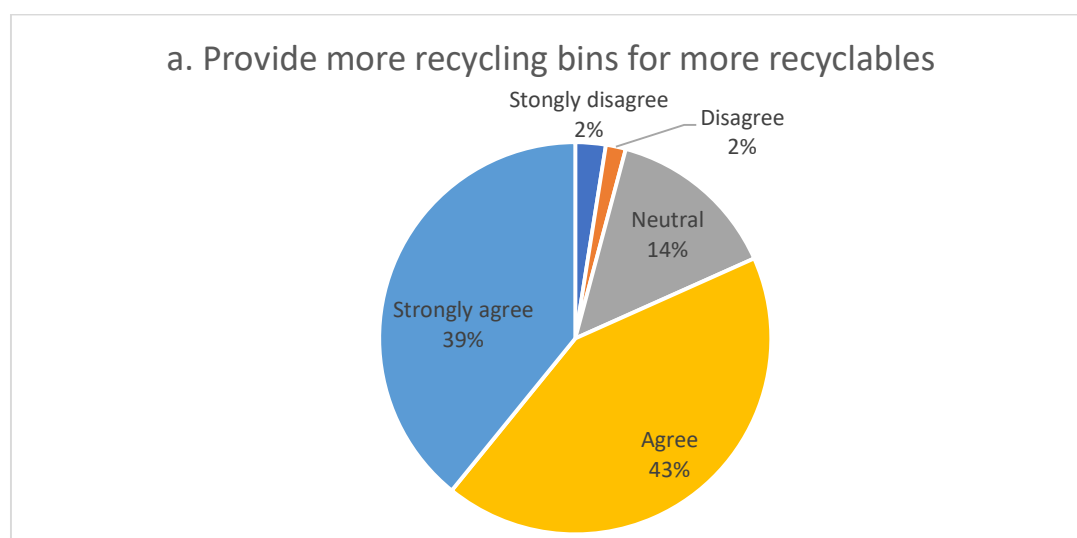
f. Provide incentives to people who come for recycling	4.13	0.966
g. Believe those recyclables would be treated properly	4.46	0.784

a. Provide more recycling bins for more recyclables.

Over 80% of participants agreed or strongly agreed that they visited the CGSs in Yuen Long District because there were more recycling bins provided for more recyclables (Figure 4.12).

The same conclusion was drawn based on the mean score of 4.16 (Table 4.19).

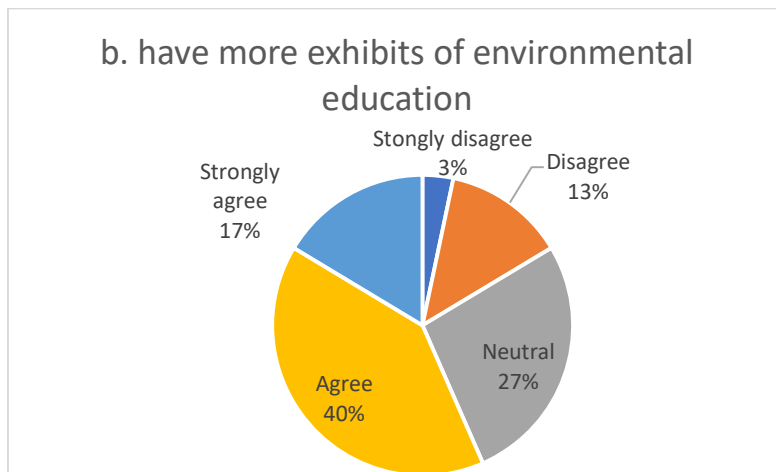
Figure 4.12 Pie chart showing the attractions of CGSs in Yuen Long District that the participants because of providing more recycling bins for more recyclables.



b. Have more exhibits of environment-educational

16% of participants disagreed or strongly disagreed that they visited the CGSs in Yuen Long District because there were more exhibits of environmental education, while 27% of them thought that was neutral (Figure 4.13). The mean score of 3.57 indicated that the location's average was slightly above neutral (Table 4.19).

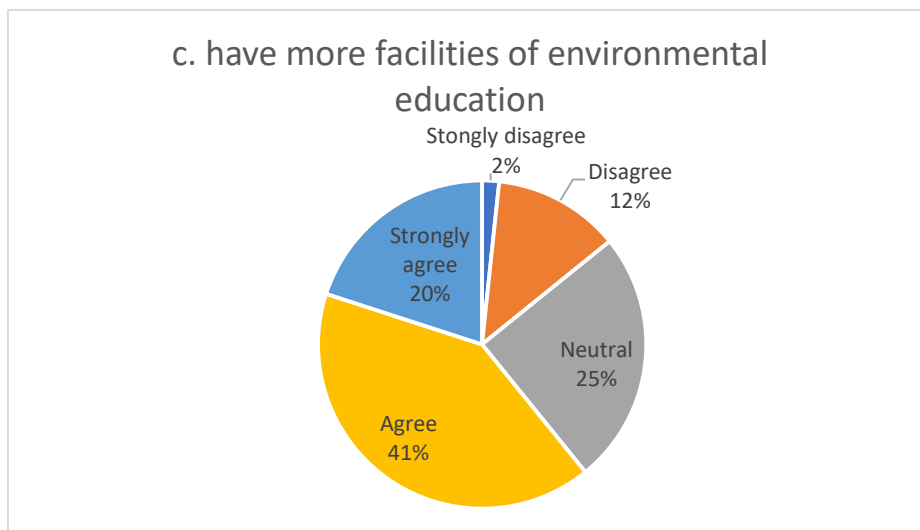
Figure 4.13 Pie chart showing the attractions of CGSs in Yuen Long District that the participants because of having more exhibits of environmental education.



**c. Have more facilities of environment-educational**

14% of participants disagreed or strongly disagreed that they visited the CGSs in Yuen Long District because there were more exhibits of environmental education, while 25% of them thought that was neutral (Figure 4.14). The mean score of 3.67 meant that the average of the more facilities of environment-educational was slightly above the neutral (Table 4.19).

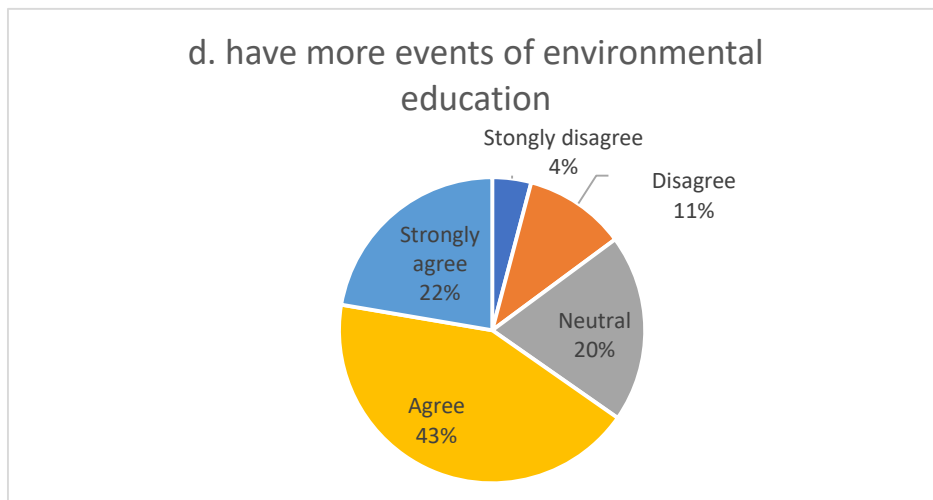
Figure 4.14 Pie chart showing the attractions of CGSs in Yuen Long District that the participants because of having more facilities of environmental education.



**d. Have more events of environment-educational**

over 40% of participants agreed that they visited the CGSs in Yuen Long District because there were more events of environmental education (Figure 4.15). The mean score of 3.77 showed that the participants had interests in join environment-educational events in CGSs (Table 4.19).

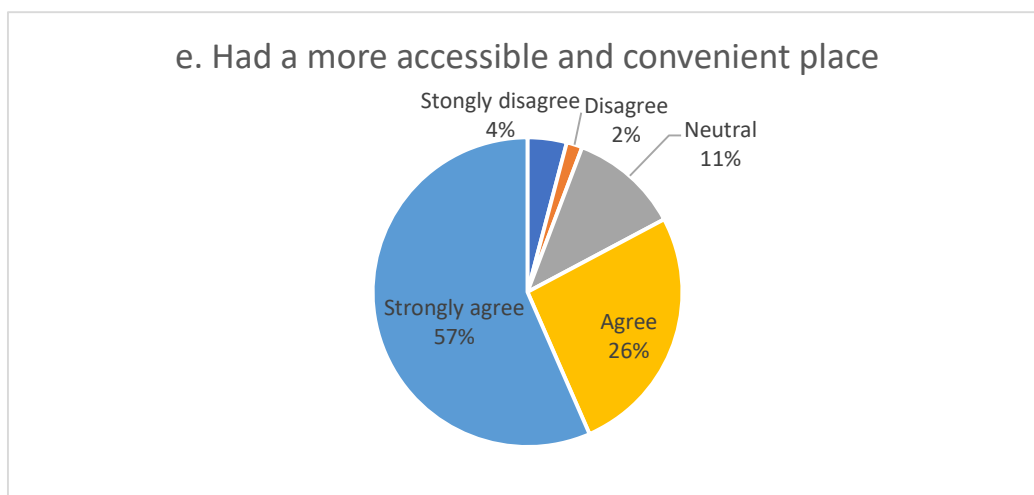
Figure 4.15 Pie chart showing the attractions of CGSs in Yuen Long District that the participants because of having more events of environment-educational



e. Had a more accessible and convenient place

Nearly 60% of participants strongly agreed that they visited the CGSs in Yuen Long District because they were location in a more accessible and convenient place (Figure 4.16). The same conclusion was drawn based on the mean score of 4.38 (Table 4.19).

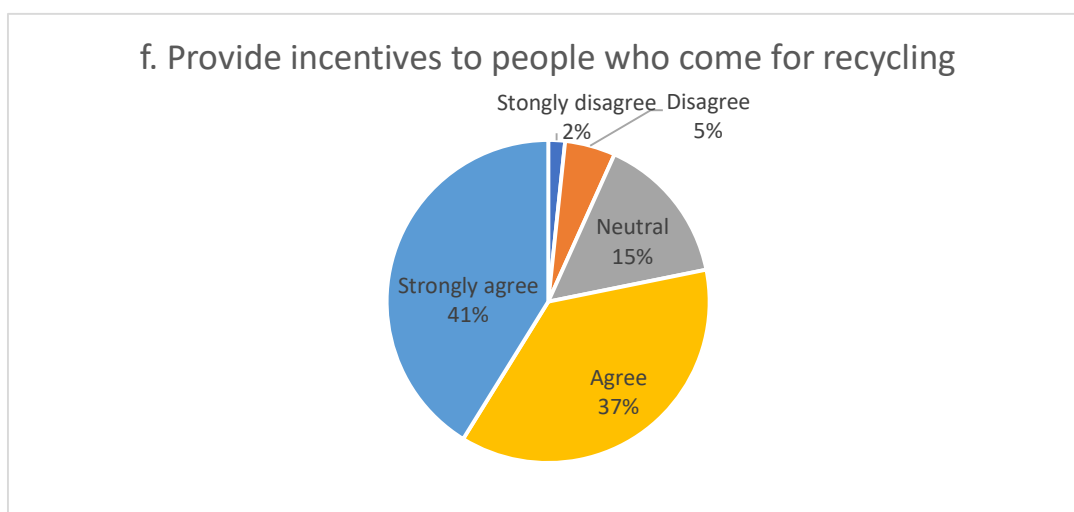
Figure 4.16 Pie chart showing the attractions of CGSs in Yuen Long District that the participants because of having a more accessible and convenient place



f. Provide incentives to people who come for recycling.

Over 70% of participants agreed or strongly agreed that they visited the CGSs in Yuen Long District because there were incentives rewarded to people who come for recycling (Figure 4.17). The same conclusion was drawn based on the mean score of 4.13 (Table 4.19).

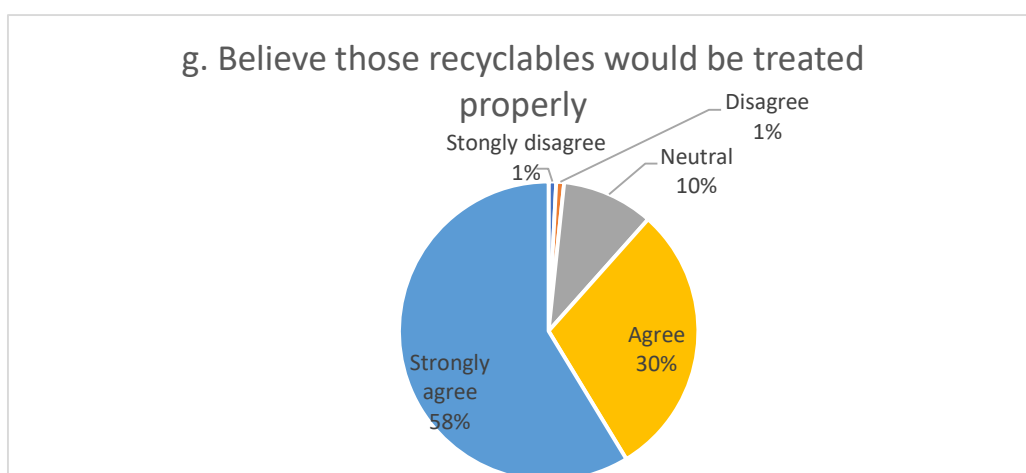
Figure 4.17 Pie chart showing the attractions of CGSs in Yuen Long District that the participants because of providing incentives to people who come for recycling



g. Believe those recyclables would be treated properly

Nearly 90% of participants agreed or strongly agreed that they visited the CGSs in Yuen Long District because most of them believed the CGSs would treat the recyclables properly (Figure 4.18). The mean score of 4.46 shows that the participants had stronger believe that CGSs are helping the treat the recyclables properly (Table 4.19).

Figure 4.19 Pie chart showing the attractions of CGSs in Yuen Long District that the participants because of believing those recyclables would be treated properly



### Rating CGSs in Yuen Long District

In Q19, seven criteria of CGSs were examined, including their functions, staff performance, location, recycling facilities, and environment-educational exhibits, locations, and environment-educational events. Using a five-point Likert scale (i.e., very poor = 1, poor = 2,

fair = 3, good = 4, very good = 5), participants were required to score the given criteria. The seven items' means, and standard deviations are shown in Table 4.20. (i.e., a-g). Indicated by a generally small SD (i.e., less than 1), the dispersion of the data set was small.

Table 4.20 Means and Standard Deviations for criteria examining the CGSs.

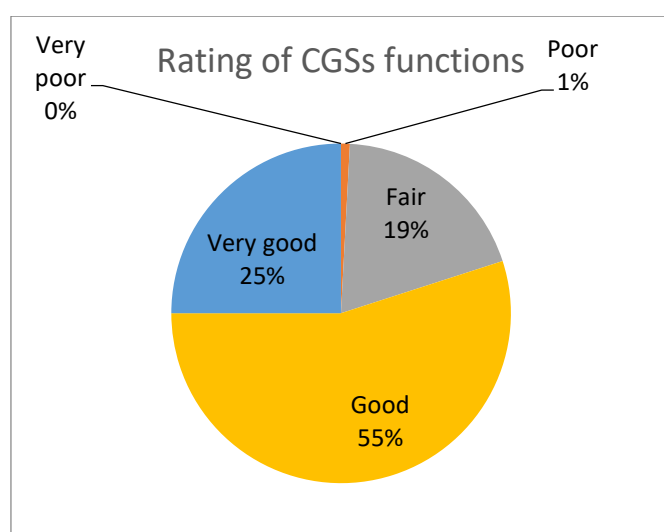
Criteria	Mean	SD
Functions	4.03	0.721
Staff's performance	4.03	0.757
Location	3.91	0.883
Recycling facilities	3.97	0.771
Exhibits of environmental education	3.56	0.882
Events of environmental education	3.65	0.841
Recycling spots	3.83	0.963

*Q19. Please rate the CGSs in Yuen Long District in terms of the following items?*

(a) Functions (i.e., the objectives of CGSs)

96 out of 120 participants agreed that the CGS's performance was good or very good (Figure 4.20). The same conclusion was drawn based on the mean score of 4.03 (Table 4.20).

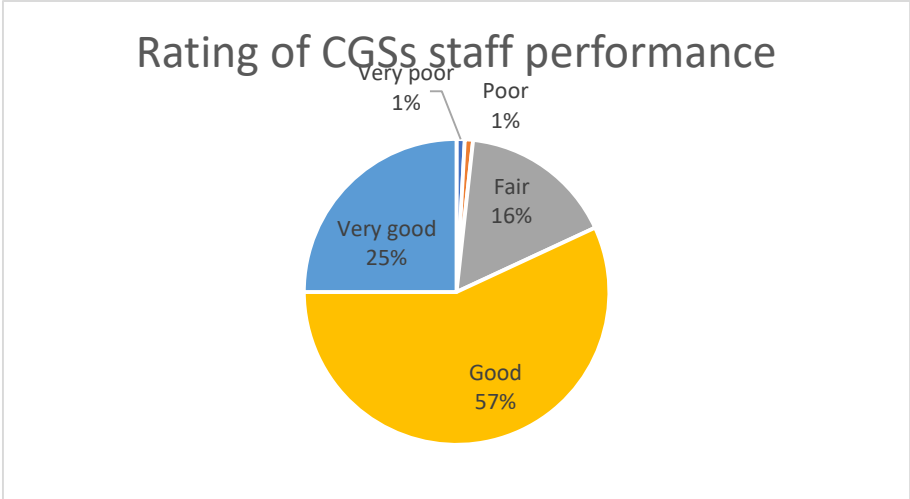
Figure 4.20 Pie chart showing the participants' rating of CGS functions.



(b) Staff's performance

Up to 82% of participants agreed that the performance of CGS staff in the Yuen Long District was good or very good, whilst just a few participants gave negative ratings (Figure 4.21). The mean score of 4.03 showed that the participants were happy with the performance of the staff (Table 4.20).

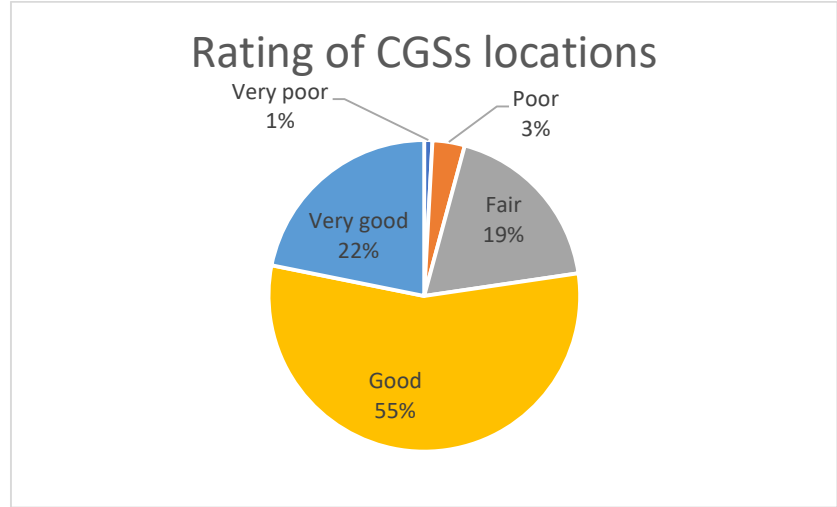
Figure 4.21 Pie chart showing the participants’ rating of staff’s performance.



(c) Location

4% of the participants claimed that the locations of the CGSs were poor or very poor and 19% of the participants thought the locations were just fair ( Figure 4.22). The mean score of 3.91 meant that the average of the locations was slightly above the fair (Table 4.20).

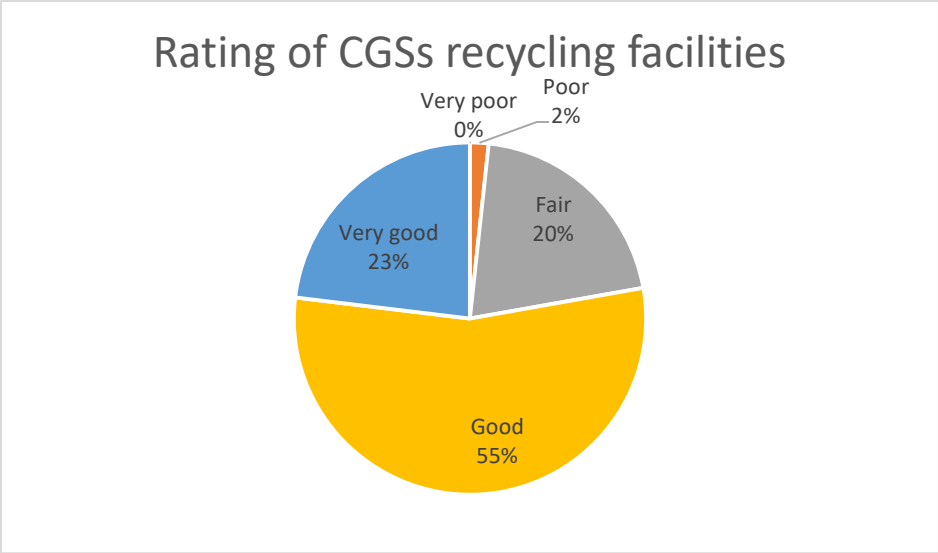
Figure 4.22 Pie chart showing the participants’ rating of CGS locations.



(d) Recycling facilities

More than 70% of the participants agreed the recycling facilities in the CGSs were good and very good. Still there were some negative and fair scores (Figure 4.23). The mean score of 3.97 indicated that the recycling facilities provided was within the range of fair to good (Table 4.20).

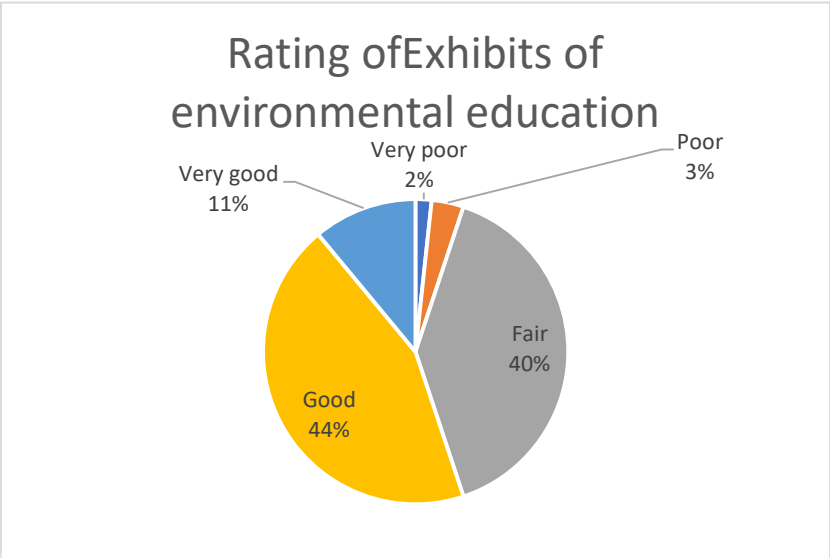
Figure 4.23 Pie chart showing the participants’ rating of CGS recycling facilities



(e) Exhibits of environment-educational

More than half of the participants agreed the exhibits of environment-educational displayed in the CGSs was good and very good. Still, there were some negative or fair scores ( Figure 4.24). The mean score of 3.56 meant that the average of the exhibits of environment-educational was within the range of fair to good (Table 4.20).

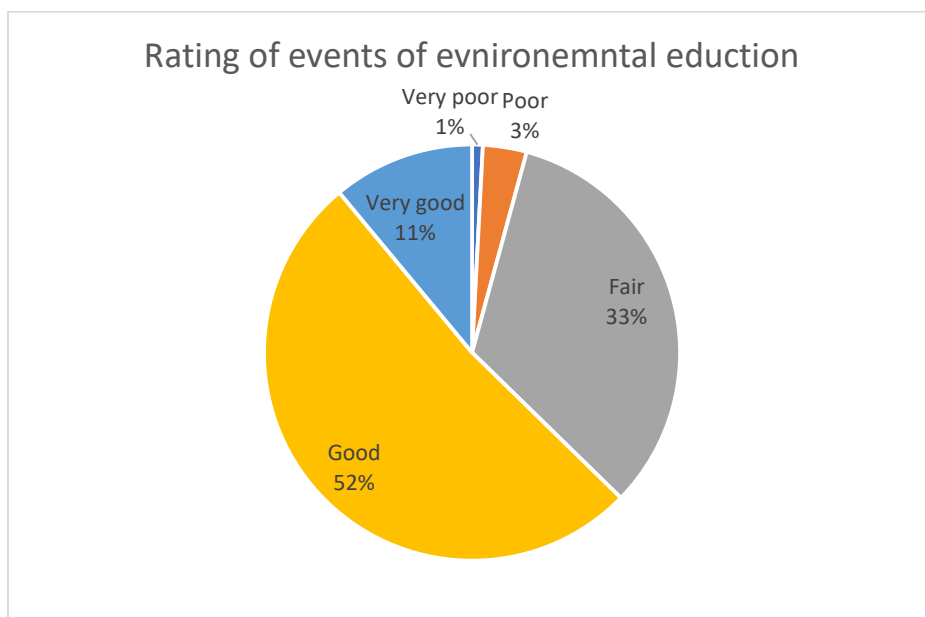
Figure 4.24 Pie chart showing the participants’ rating of exhibits of environment-education



(f) Events of environment-education

63% of the participants agreed the events of environment-educational conducted in the CGSs was good and very good. Still, there were some negative or fair scores ( Figure 4.25). The mean score of 3.65 meant that the average of the events of environment-educational was within the range of fair to good (Table 4.20).

Figure 4.25 Pie chart showing the participants' rating of events of environmental education.

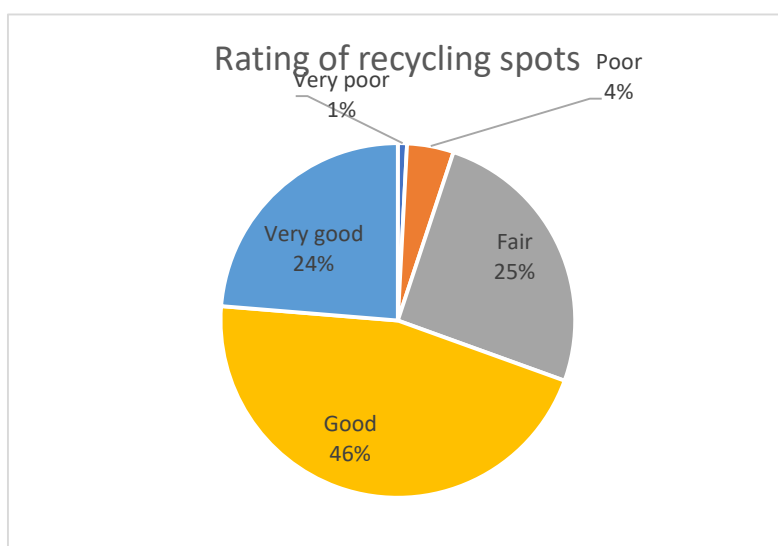


(g) Recycling spots

Up to 70% of the participants agreed the recycling spots held was good or very good whilst just a few participants gave negative ratings (Figure 4.26). the mean score of 3.83 showd that the recycling spots was within the range of fair to good (Table 4.20).



Figure 4.26 Pie chart illustrating the ratings of recycling spots



### Recycling behaviour & Attitude towards the waste reduction and recycling

Regarding the recycling behaviour and attitudes of the participants, two questions were asked regarding their recycling habits before to and after the establishment of CGSs, and one question was asked about the recyclables they recycle most often.

Lastly, participants were asked five questions on their recycling attitudes and given policy suggestions to boost the waste reduction and recycling performance of CGSs. Respondents were required to score three statements on a 5-point Likert scale using the following grading scale: strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5. The averages and standard deviations (Standard Deviations) for the three statements are shown in Table 4.21. (i.e., 23-25). Each statement received a high mean score and a small standard deviation (less than 1). It revealed that the participants have positive attitudes towards recycling and that the data set showed little variation. These questions were required of all participants.

Table 4.21 Means and Standard Deviations for criteria examining the positive attitudes towards recycling (i.e., Q23-25)

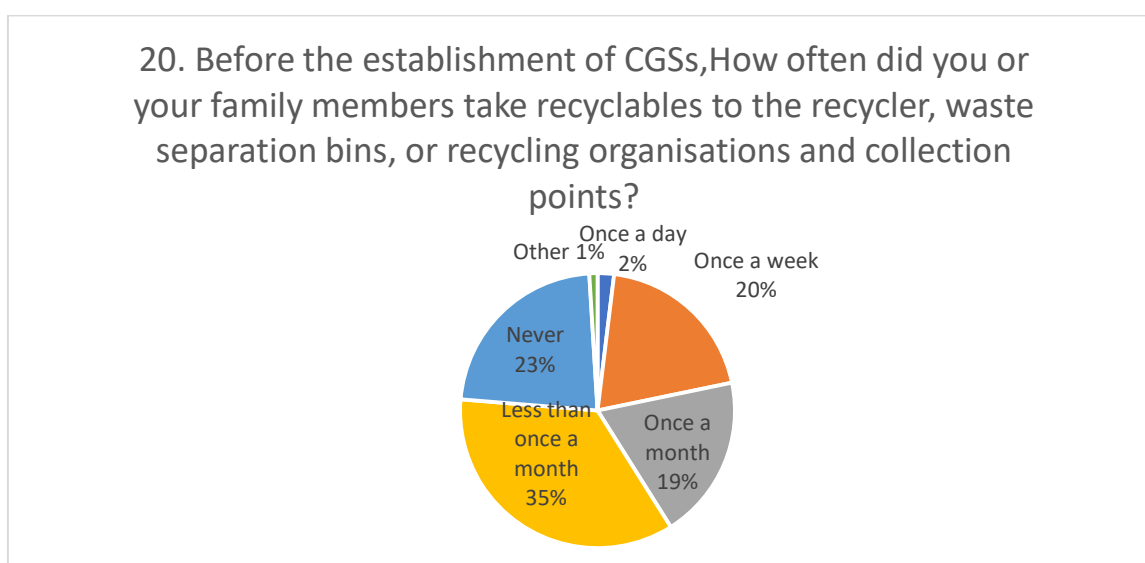
Criteria	Mean	SD
Q23. It is crucial to develop the habit of recycling.	4.44	0.773
Q24. I am responsible for turning waste to energy through recycling.	4.22	0.804

Q25. I can separate the recyclables and drop off them to designated recycling bins accordingly.	4.22	0.845
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*Q20. Before the establishment of CGSs, How often did you and your family recycle e.g., take recyclables to the recycler, recycling bins, or recycling organisations and collection points?*

The highest proportion reported the participants, or their family members recycled less often than once per month (35%) , followed by 23% of those who never recycled. 20% of the participants claimed that they recycled recycle once a week, whereas 19% of the participants or their family members recycled once a month. Just 2% of the participants claimed that they recycled once a day. Another 1% of participants chose "other" as their recycling frequentness (Figure 4.27).

Figure 4.27 Pie chart showing the frequentness that the participants or their family members would recycle before the establishment of CGSs.

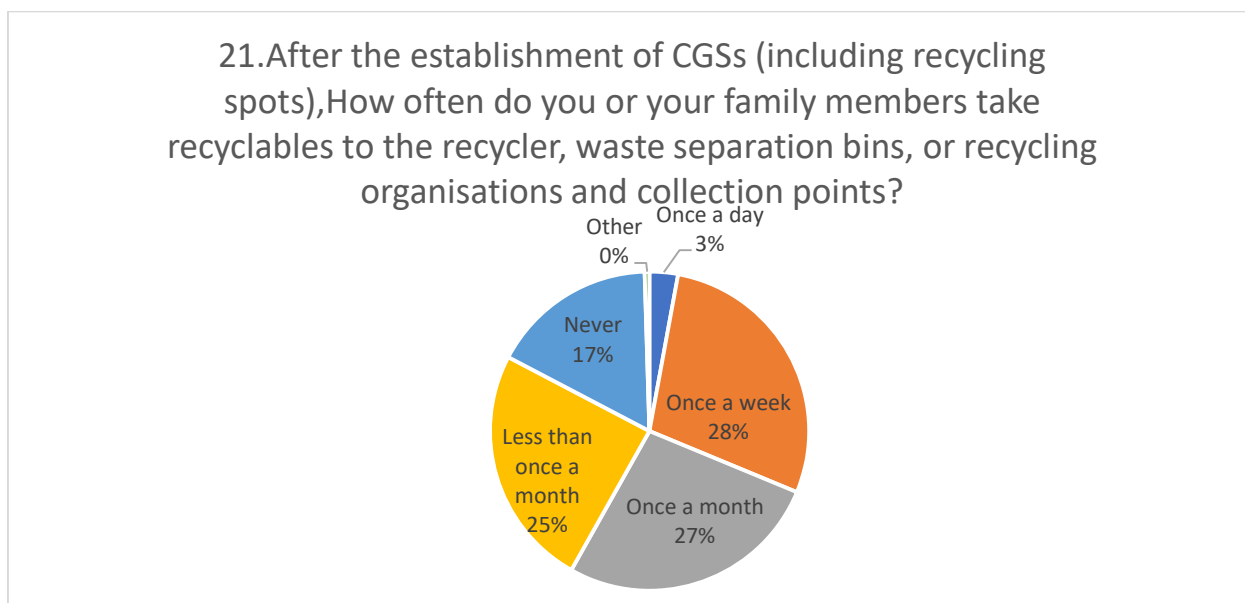


*Q21. After the establishment of CGSs (including recycling spots), recycle e.g., take recyclables to the recycler, recycling bins, or recycling organisations and collection points?*

More than 80% of the participants have recycled. The vast majority of participants (28%) reported that they and their family recycle once a week, followed closely by 27% of the participants or their family members who do once a month. 25% the participants claimed that

they recycle less than once a month, while a mere 17% reported the participants or their family members never recycle. Only a tiny fraction, the participants, or their family members (3%) recycle once a day. There were no other responses as the frequency of recycling (Figure 4.28).

Figure 4.28 Pie chart showing the frequentness that the participants or their family members would recycle after the establishment of CGSs.



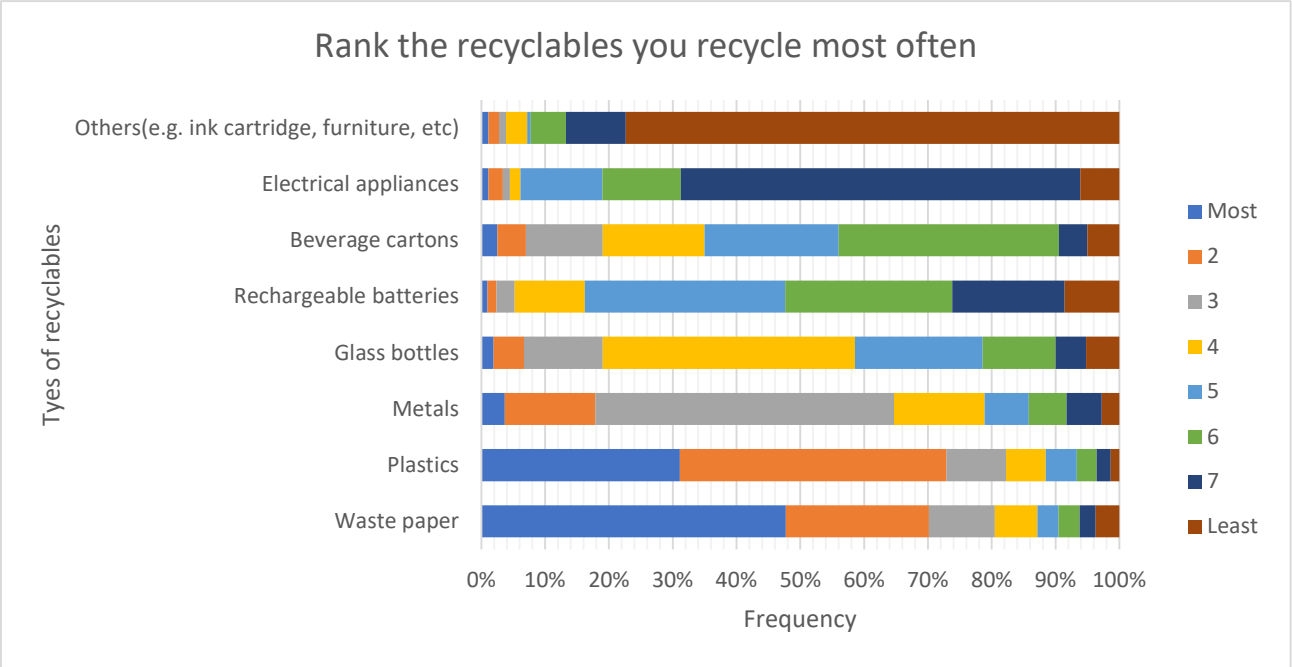
Q22. Please rank the recyclables you recycle most often (1=Most, 8=Least)

This stacked bar chart displays data on eight recyclables, ranked by frequency from most often to least often (Figure 4.29). The Y-axis lists the recyclables in order of their ranking, with waste paper, plastics, metals, glass bottles, rechargeable batteries, beverage cartons, electrical devices and other (e.g., ink cartridge, furniture) appearing on the right. The X-axis represents the total frequency of all eight recyclables, with the height of each bar reflecting the total frequency.

Each bar is divided into segments, with each segment representing the frequency of a specific recyclable from most often recycle to least often recycle. The colours used for each segment are consistent throughout the chart, with each colour representing the frequency. The chart showed that waste paper and plastics are the most often recycled materials, while other recyclables such as ink cartridge and furniture is the least often recycled material.

This chart provides valuable insights into the recycling habits of the population and highlights the areas where more attention and resources are needed to improve recycling rates.

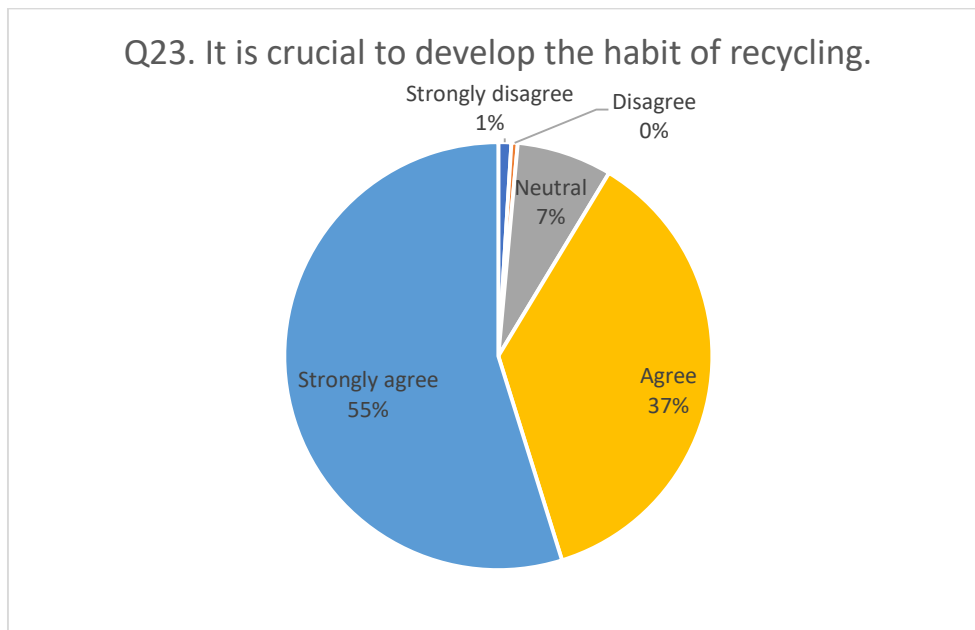
Figure 4.29 Stacked bar cart showing the ranking of the recyclables that the participants recycle from most often to least often in eight recyclables.



*Q23. It is crucial for developing the recycling habits.*

55% of participants strongly agreed and 37% agreed with the statement (Figure 4.30).The average score is high of 4.44 indicated that the participants agreed that recycling should become a habit (Table 4.21).

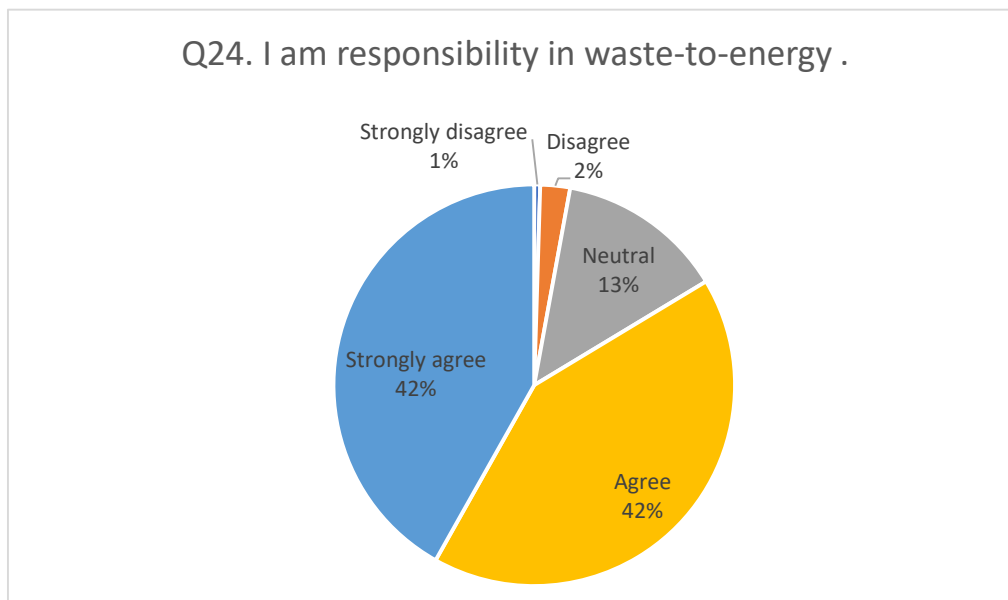
Figure 4.30 Pie chart demonstrating the percentage of participants who believe that it is crucial for developing the recycling habits.



*Q24. I am responsible for turning waste to energy through recycling.*

Approximately 80% of participants agreed or strongly agreed with the statement (Figure 4.31). The average score is high of 4.22 indicated that participants agreed with the responsibility in waste-to-energy (Table 4.21).

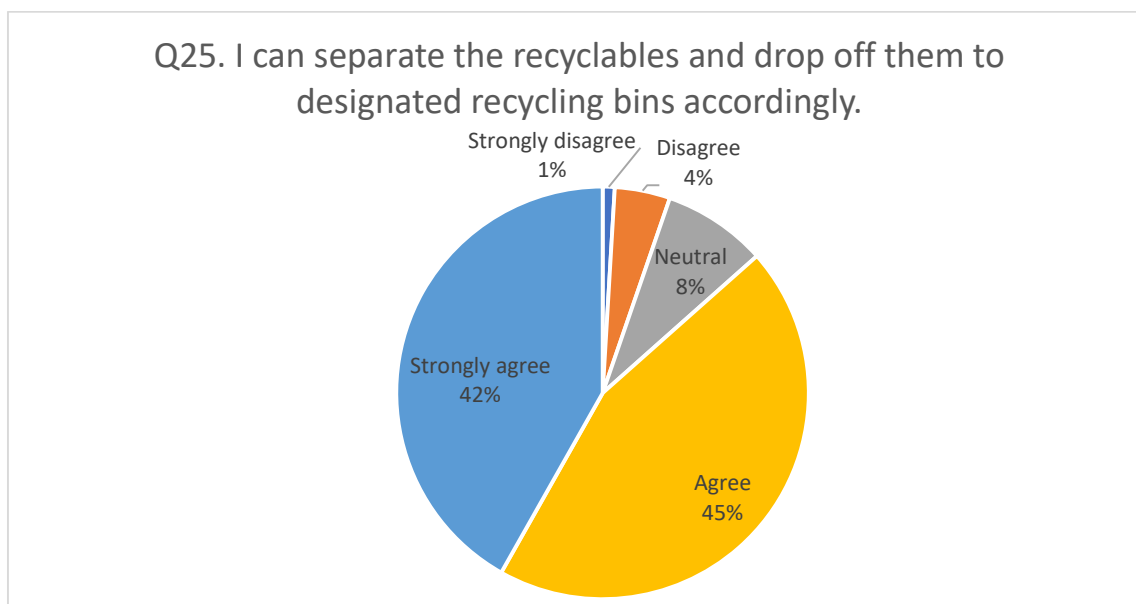
Figure 4.31 Pie chart showing whether the participants agree to be responsible responsibility in waste-to-energy.



*Q25. I can separate the recyclables and drop off them to designated recycling bins accordingly.*

Almost 90% of participants agreed or strongly agreed with the statement (Figure 4.32). The average score is high of 4.22 suggested that participants thought they can separate the recyclables and drop off them to designated recycling bins accordingly (Table 4.21).

Figure 4.32 Pie chart showing whether the participants think they can separate the recyclables and drop off them to designated recycling bins accordingly.



Q26. Do you believe that the CGSs projects would encourage more citizens to participate in waste reduction and recycling?

A majority of the participants (89%) believed that the CGSs projects would encourage more citizens to participate in waste reduction and recycling, which accounted for 185 out of 208 participants (Figure 4.33).

Figure 4.33 Pie chart showing whether the participants believe the CGSs projects would encourage more citizens to participate in waste reduction and recycling



*Q27. Which policy do you think can help enhance the performance of CGSs in waste reduction and recycling?*

In Q27, six policies were examined, including the producer responsibility scheme, funding, infrastructure, regulations, and charging. Participants were required to rate the provided policies using a five-point Likert scale (i.e., strongly ineffective = 1, ineffective = 2, neutral = 3, effective = 4, strongly effective = 5). Table 4.22 shows the means and standard deviations for the six policies. (i.e., a-f). A large standard deviation (i.e., greater than 1) was shown, indicating that the data set was dispersed over a larger range from the means.

Table 4.22 Means and Standard Deviations for examining whether the participants think the policies can help enhance the performance of CGSs in waste reduction and recycling (i.e., Q27a-f).

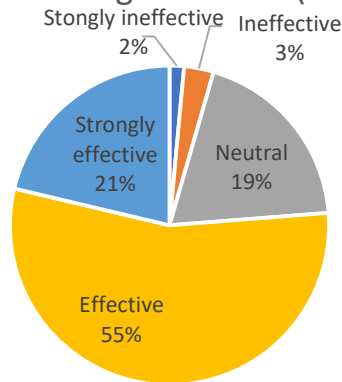
	Mean	SD
a. Producer Responsibility Scheme (PRS) on Glass Beverage Containers or plastic beverage e.g., reverse vending machines (RVMs)	3.95	0.822
b. Set up a Green Tech Fund (GTF)	3.7	0.915
c. Expansion of Ecopark	3.68	0.937
d. Environmental Levy Scheme on Plastic Shopping Bags	3.82	1.141
e. Regulation of disposable plastic tableware and other plastic products	4.19	0.943
f. Municipal solid waste (MSW) charging	3.81	1.065

a. Producer Responsibility Scheme (PRS) on Glass Beverage Containers or plastic beverage e.g., reverse vending machines (RVMs)

Nearly 80% of participants claimed that Producer Responsibility Scheme (PRS) on glass beverage containers or plastic beverage was effective or strongly effective to help enhance the performance of CGSs in waste reduction and recycling (Figure 4.34). The mean score of 3.95 meant that the average of the Producer Responsibility Scheme (PRS) was effective (Table 4.22).

Figure 4.34 Pie chart showing whether the participants believe the Producer Responsibility Scheme (PRS) on glass beverage containers or plastic beverage can help enhance the performance of CGSs in waste reduction and recycling.

a. Producer Responsibility Scheme (PRS) on glass beverage containers or plastic beverage e.g. reverse vending machines (RVMs)

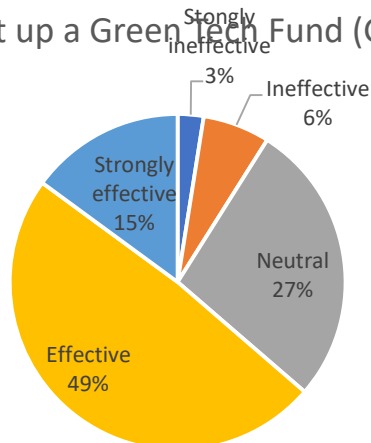


b. Set up a Green Tech Fund (GTF)

Up to half of the participants thought setting up a Green Tech Fund was effective to help enhance the performance of CGSs in waste reduction and recycling (Figure 4.35) while there were nearly 30% of them thought it was neutral. The mean score of 3.7 meant that the average of setting up Green Tech Fund (GTF) was slightly above the neutral (Table 4.22).

Figure 4.35 Pie chart showing whether the participants believe setting up a Green Tech Fund (GTF) can help enhance the performance of CGSs in waste reduction and recycling

b. Set up a Green Tech Fund (GTF)

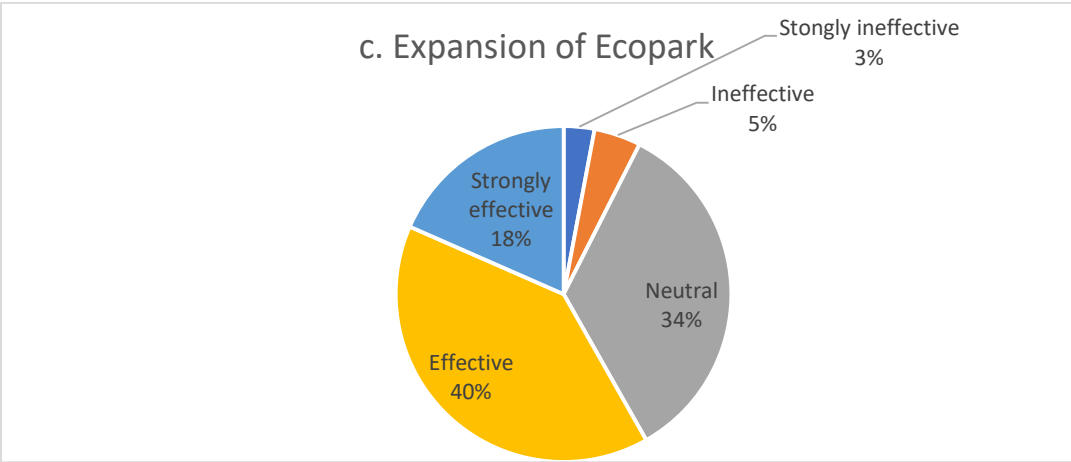


c. Expansion of Ecopark

8% of the participants claimed that expanding Ecopark were ineffective or strongly ineffective and 34% of the participants thought it was neutral ( Figure 4.36). The average score of 3.68 indicated that the expansion of Ecopark was slightly positive (Table 4.20).



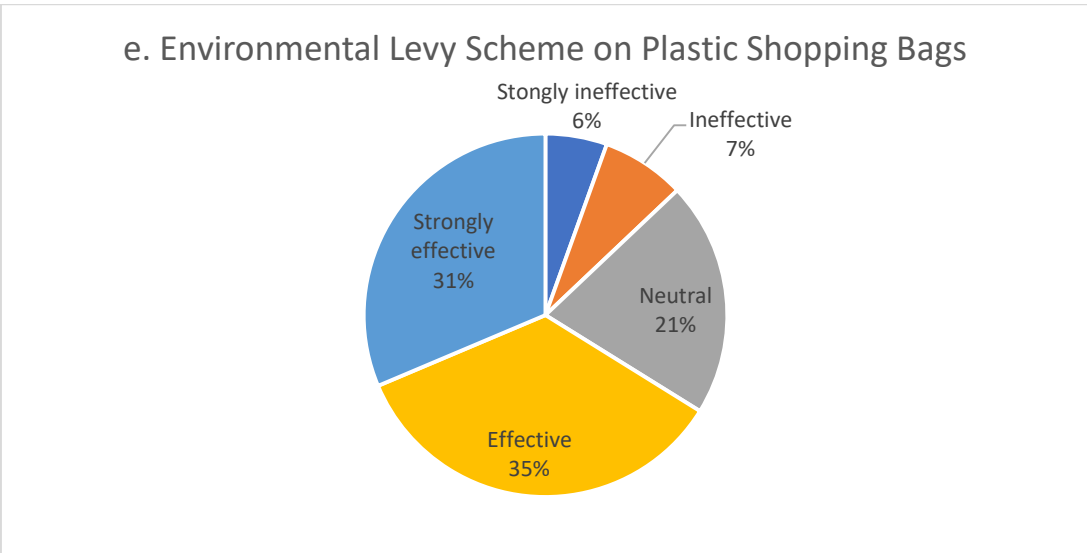
Figure 4.36 Pie chart showing whether the participants believe expansion of Ecopark can help enhance the performance of CGSs in waste reduction and recycling.



d. Environmental Levy Scheme on Plastic Shopping Bags

More than 60% of participants thought the implementation of environmental levy scheme on plastic shopping bags was effective or strongly effective to help enhance the performance of CGSs in waste reduction and recycling (Figure 4.37). The mean score of 3.82 meant the implementation of environmental levy scheme on plastic shopping bags was effective (Table 4.22).

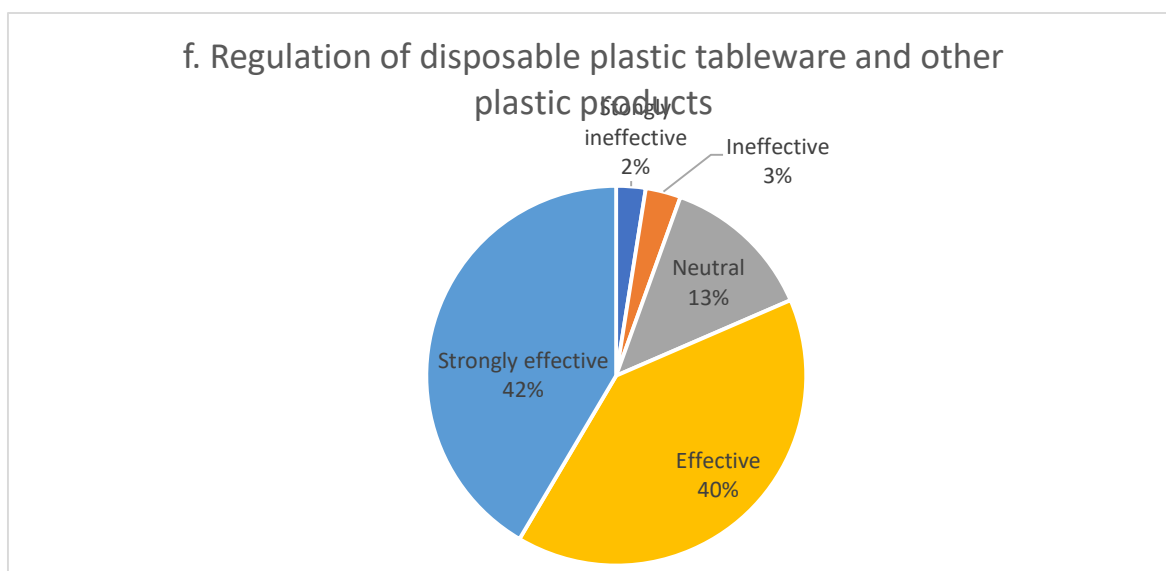
Figure 4.37 Pie chart showing whether the participants believe implementation of environmental levy scheme on plastic shopping bags can help enhance the performance of CGSs in waste reduction and recycling.



e. Regulation of disposable plastic Tableware and other plastic products

More than 80% of participants thought the regulation of disposable plastic Tableware and other plastic products was effective or strongly effective to help enhance the performance of CGSs in waste reduction and recycling (Figure 4.38). The mean score of 4.19 meant the implementation of environmental levy scheme on plastic shopping bags was within effective and strongly effective (Table 4.22).

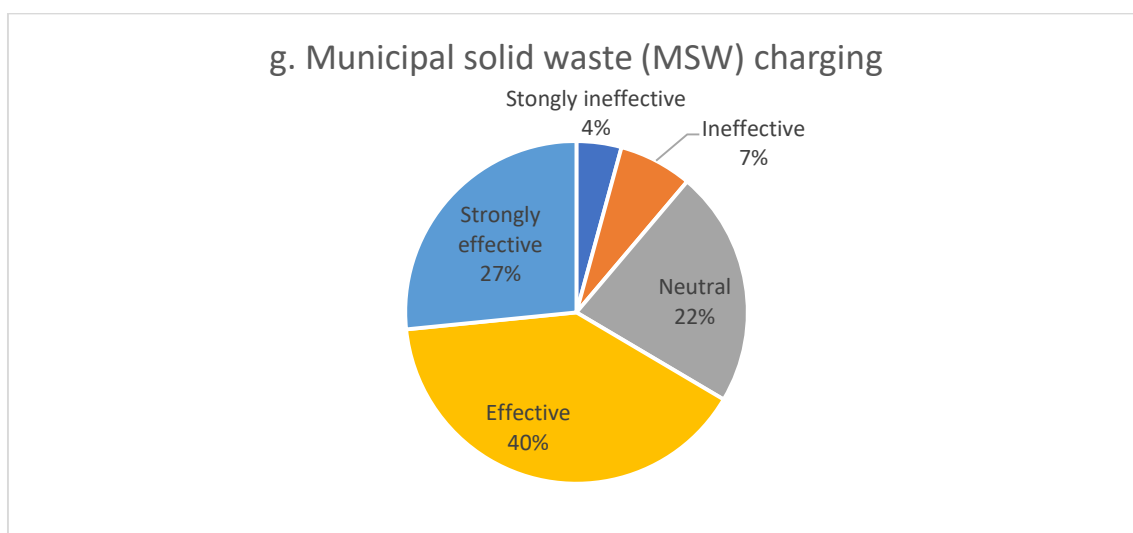
Figure 4.38 Pie chart showing whether the participants believe regulation of disposable plastic tableware and other plastic products can help enhance the performance of CGSs in waste reduction and recycling.



#### f. Municipal solid waste (MSW) charging

Up to 40% of participants thought implementation of municipal solid waste was effective to help enhance the performance of CGSs in waste reduction and recycling (Figure 4.39). The mean score of 3.81 meant the implementation of municipal solid waste was within neutral and effective (Table 4.22).

Figure 4.39 Pie chart showing whether the participants believe implementation of municipal solid waste (MSW) charging can help enhance the performance of CGSs in waste reduction and recycling



### Knowledge about CGSs in Yuen Long District

Two questions were given to visitors and residents on their knowledge of the CGS (i.e., Q28-29). One question tested participants' knowledge of which recyclables the CGSs can recycle. On the other side, a question on the CGSs in the Yuen Long District was asked to determine if the participants can match the locations of these CGSs correctly.

*Q28. Which recyclables can be recycled in the CGSs in Yuen Long District ? (Choose more than 1)*

The participants received a list of nine categories of recyclables to identify the materials received by the CGSs in Yuen Long District. More than 70% (153 of 208 participants) were able to identify accepted recyclables as waste paper, plastics, metal, and glass bottles. Nonetheless, fewer participants correctly identified electrical devices, rechargeable batteries, light bulbs, and tubes. Several participants incorrectly supposed that clothing and furniture could be recycled in the CGSs of the Yuen Long District (Figure 4.40). Also, only 64 out of 208 participants (34%) got all correct answer and identified the 7 types of recyclables supported in the CGSs in Yuen Long District (Figure 4.41)

Figure 4.40 Bar chart showing the participants' knowledge on types of recyclables can be recycled in CGSs in Yuen Long District

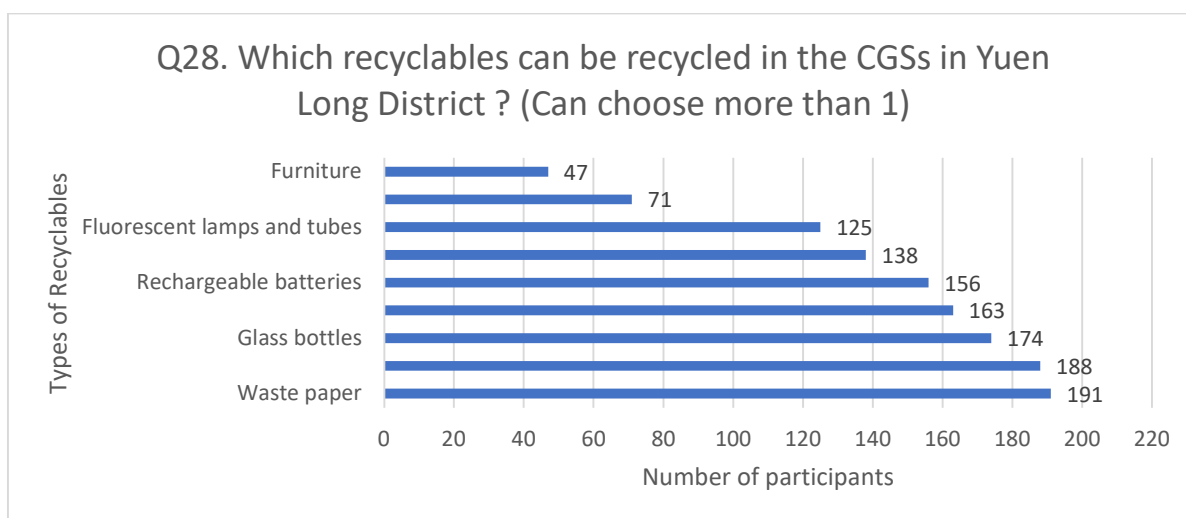
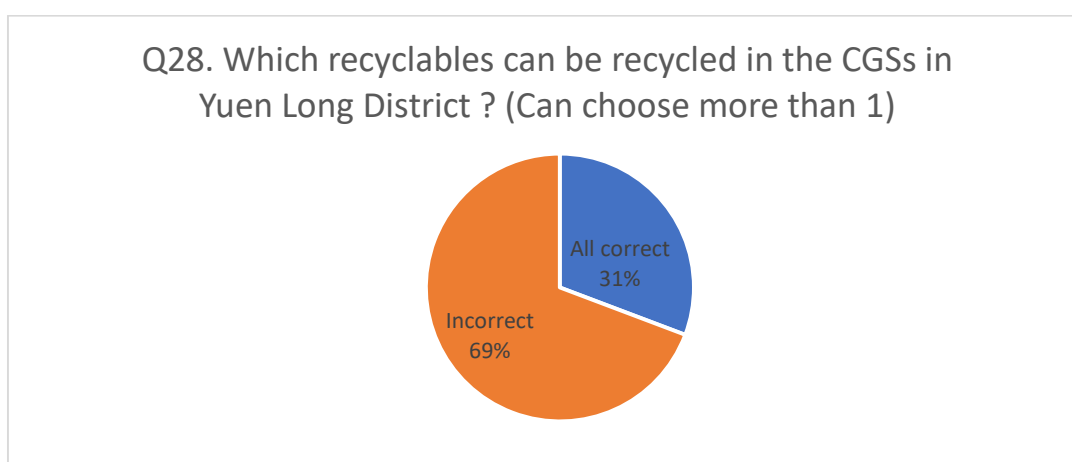


Figure 4.41 Pie chart showing the correction on types of recyclables can be recycled in CGSs in Yuen Long District



Q29. Match the locations of GREEN@ YUEN LONG (A), GREEN@YUEN LONG HUI (B), GREEN@LONG PING (C).

GREEN@ YUEN LONG, GREEN@YUEN LONG HUI ,GREEN@LONG PING are distributed to provide recycling services to Yuen Long District. For the correct responses of the location of GREEN@YUEN LONG, only 98 out 208 participants (47%) answered correctly which matched the address as 65 Tin Wah Road, Tin Shui Wai (Figure 4.42). For the correct response of the location of GREEN@YUEN LONG HUI, there was 105 out of 208 participants answered correctly which matched the address as Shop 3-8, G/F, Far East Consortium Yuen Long Building, 13-33 Yuen Long On Lok Road, Yuen Long (Figure 4.43). 4For the correct responses of the location of GREEN@LONG PING, only 98 out 208 participants (47%) answered correctly which matched the address as Shop K & L, G/F, Hung

Fat House, 87-99 Kau Yuk Road, Yuen Long (Figure 4.44). Also, only 70 out of 208 participants (34%) got all correct answer who matched the locations of GREEN@ YUEN LONG ,GREEN@YUEN LONG HUI ,GREEN@LONG PING correctly (Figure 4.45) .

Figure 4.42 Pie chart showing if the participants can match the locations of GREEN@YUEN LONG correctly.

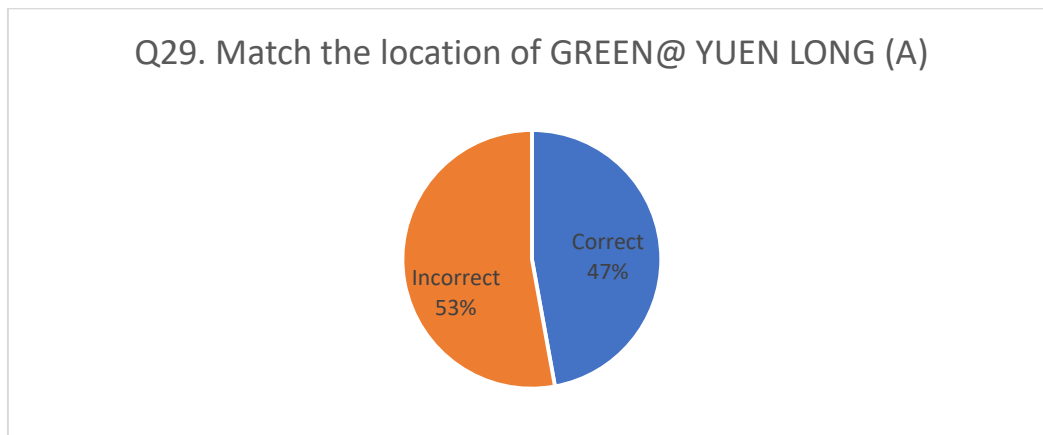


Figure 4.43 Pie chart showing if the participants can match the locations of GREEN@YUEN LONG HUI correctly.

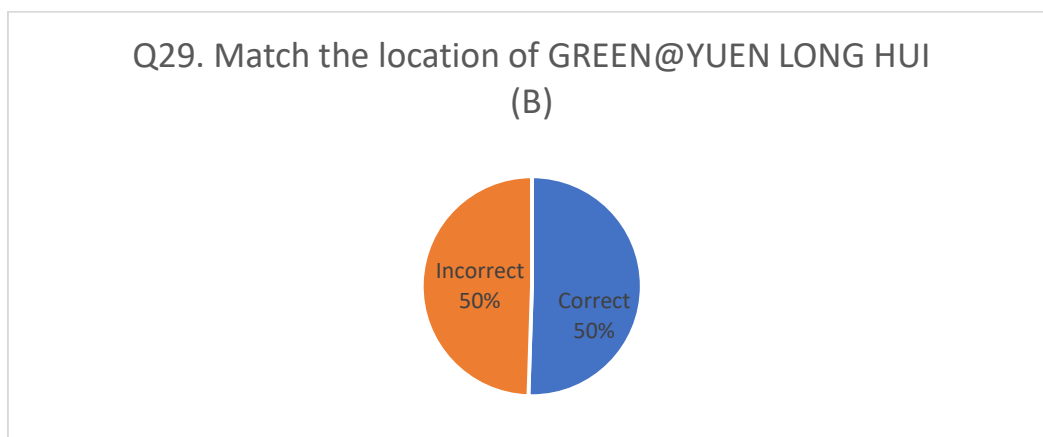


Figure 4.44 Pie chart showing if the participants can match the locations of GREEN@LONG PING correctly.

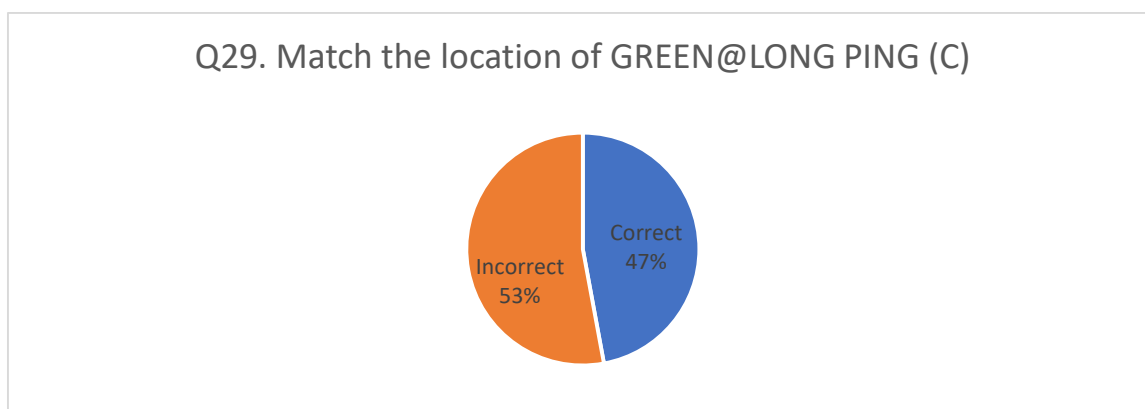
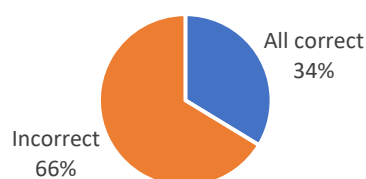


Figure 4.45 Pie chart showing if the participants can match the locations of these CGSs correctly.

Q29. Match the location of GREEN@ YUEN LONG (A), GREEN@YUEN LONG HUI (B), GREEN@LONG PING (C)



## 4.2. Qualitative data – Field visit

CGSs are working to boost the environment-educational as well as enhance community engagement in waste management in the community. To get a better understanding of the work and operations of each CGS, field visits were undertaken four times. After completing the field visits, the findings and observations were collected and divided into three sectors: (1) Environment-educational service; (2) Waste reduction and recycling facilities; and (3) CGSs' popularity.

### (1) Environment-educational service

There are some environmental education- related exhibits, facilities and workshops offered inside the CGSs. Regarding to the exhibits, four main types of recyclables, including glass bottles, electrical devices, plastics, paper, are shown as general exhibits (Figure 4.46-4.47).

Figure 4.46 Environment-educational exhibits in GREEN@LONG PING. Source: Taken on 1/3/2023



Figure 4.47 Environment-educational exhibits in GREEN@YUEN LONG. Source: Taken on 15/2/2023



Also, details are provided for each sort of recyclables, including the situation of current recycling, the sources of the waste, correct procedures of clean recycling, and ways to reuse, recycle even reduce waste. And in GREEN@YUEN LONG, the further recycling treatment of recyclables was shown by an LED monitor to let public believe that the recyclables have a proper treatment after recycling (Figure 4.48).

Figure 4.48 LED monitor in GREEN@YUEN LONG. Source: Taken on 25/2/2023.





Besides, used books were available in GREEN@YUEN LONG and GREEN@YUEN LONG HUI to encourage visitors to take out books of interest and return them when they are finished, which is an environmentally responsible habit (Figure 4.49-4.50). But during the COVID-19, service of book crossing was temporarily unavailable.

Figure 4.49 Poster of book crossing activity in GREEN@YUEN LONG. Source: Facebook of GREEN@YUEN LONG (2023)





Figure 4.50 Poster of book crossing activity in GREEN@YUEN LONG HUI .Source: Facebook of GREEN@YUEN LONG HUI (2023).



In addition, these three CGSs in Yuen Long District consistently conduct environment-educational events inside the activities and public areas. The public can view the activity schedules on their Facebook pages and office notice boards (Figure 4.51-4.54). which are related to the green lifestyles. For the engagement of the public, all workshops are completely free, and anyone may register for the events via online, by phone, or in person at the CGS offices. In addition, CGSs organize some featured events for the exchange of used goods. The public has can visit CGSs freely in to search for useful items such as books. For example, there is a book corner available to public and children to read books or play toys in GREEN@YUEN LONG (Figure 4.55).

Figure 4.51 Schedule of environment-educational and community activities and recycling spots held by GREEN@YUEN LONG in April 2023 Source: Facebook of GREEN@YUEN LONG (2023)

綠在元朗 GREEN @ YUEN LONG HUI						
4/2023 回收及環保教育活動一覽表						
星期日	星期一	星期二	星期三	星期四	星期五	星期六
<div> <div> <b>顏色對照表</b>            回收流動點            特色市集活動            外展活動         </div> <div> <b>星期日</b>            復活節            復活節            復活節            復活節         </div> <div> <b>星期一</b>            復活節            復活節            復活節            復活節         </div> <div> <b>星期二</b>            復活節            復活節            復活節            復活節         </div> <div> <b>星期三</b>            復活節            復活節            復活節            復活節         </div> <div> <b>星期四</b>            復活節            復活節            復活節            復活節         </div> <div> <b>星期五</b>            復活節            復活節            復活節            復活節         </div> <div> <b>星期六</b>            復活節            復活節            復活節            復活節         </div> </div>						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

綠在元朗 GREEN @ YUEN LONG HUI						
4/2023 回收及環保教育活動一覽表						
星期日	星期一	星期二	星期三	星期四	星期五	星期六
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Figure 4.52 Schedule of environment-educational and community activities and recycling spots held by GREEN@YUEN LONG HUI in April 2023 Source: Facebook of GREEN@YUEN LONG HUI (2023)

綠在元朗  
GREEN @ YUEN LONG HUI

回收流動點  
GREEN @ YUEN LONG HUI | Recycling Spot

回收流動點  
GREEN @ YUEN LONG HUI | Recycling Spot

### 環保工作坊 2023年3月

**DIY 控油炭灰洗面機**  
 工作坊編號: W5230301 **20人限定 (天然系列)**  
 與天然水質及溫室氣體結合，將手作製作成天然的控油炭灰洗面機。減低日常生活中的油炭灰的消耗。(參加者需自備 236ml 溫熱牛奶或豆漿、廁所洗滌手套、及面碗)  
 2023年3月18日 (星期六)  
 11:00 - 12:30 只提供面報

**DIY 膠樽盆栽**  
 工作坊編號: W5230302 **20人限定 (天然系列)**  
 與天然水質及溫室氣體結合，利用可回收材料製作DIY膠樽盆栽。減少化學品對環境的損害。(參加者需自備1-2個 500-1500 ml 空膠樽)  
 2023年3月18日 (星期六)  
 14:00 - 15:30 只提供面報

**DIY 香蕉燕麥皂**  
 工作坊編號: W5230303 **20人限定 (天然系列)**  
 利用天然材料製作香蕉燕麥皂。減少化學品對環境的損害。(參加者需自備 236ml 溫熱牛奶或豆漿、廁所洗滌手套、及面碗)  
 2023年3月25日 (星期六)  
 11:00 - 12:30 只提供面報

**天然護膚品工作坊**  
 工作坊編號: W5230304 **20人限定 (天然系列)**  
 利用天然材料製作天然護膚品及保養乳霜。減少化學品對環境的損害。(參加者需自備2個50 ml 罐口罐)  
 2023年3月25日 (星期六)  
 14:30 - 16:00 只提供面報

**報名方法:**  
 1.親身到綠在元朗報名  
 2.網上填寫Google Form  
 3.結果查詢(活動7天前): (請輸入電話號碼)

**報名請知:**  
 1.如有任何事項，本會將保留所有最終決定權  
 2.感謝各位支持環保，培養綠色生活習慣  
 3.結果查詢(活動7天前): (請輸入電話號碼)

**特設地點 Add-on Spots**

日/月	時間	地點
01/03/2023	13:00 - 16:00	天水圍近天慈輕鐵站 對出行人路 Tin Shui Wai
04/03/2023	13:00 - 16:00	元朗大堂噴門 對出空地 Open Area Outside Hillwood, Tai Tong, Yuen Long
05/03/2023	13:00 - 16:00	元朗洪水橋輕鐵站隧道口 (大發餐廳對出) Exit of Subway, Hung Shui Kiu LRT Stop, Yuen Long (Outside Tai Fat Restaurant)
08/03/2023	13:00 - 16:00	天水圍近天慈輕鐵站 對出行人路 Tin Shui Wai
11/03/2023	10:00 - 13:00	元朗錦繡花園 露天劇場 Fairview Park, Yuen Long
12/03/2023	13:00 - 16:00	元朗洪福邨巴士總站 Hung Fuk Estate Bus Terminal, Yuen Long

**特設地點 Add-on Spots**

日/月	時間	地點
15/03/2023	13:00 - 16:00	天水圍近天慈輕鐵站 對出行人路 Tin Shui Wai
18/03/2023	13:00 - 16:00	元朗尚悅住客會所(尚悅會) 對出空地 Open Space outside the Club Resch, Yuen Long
19/03/2023	13:00 - 16:00	元朗洪水橋輕鐵站隧道口 (大發餐廳對出) Exit of Subway, Hung Shui Kiu LRT Stop, Yuen Long (Outside Tai Fat Restaurant)
22/03/2023	13:00 - 16:00	天水圍近天慈輕鐵站 對出行人路 Tin Shui Wai
24/03/2023	13:00 - 16:00	元朗俊賢坊 露天花園側 Next to Fu Lung Garden, Chun Yin Square, Yuen Long
26/03/2023	13:00 - 16:00	元朗洪福邨巴士總站 Hung Fuk Estate Bus Terminal, Yuen Long

Figure 4.53 Schedule of recycling spots held by GREEN@YUEN LONG HUI in April 2023. Source: Taken on 25/2/2023.

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Figure 4.54 Schedule of recycling spots held by GREEN@LONG PING in April 2023 Source: Facebook of GREEN@LONG PING (2023)

綠在朗屏   回收流動點 GREEN @ LONG PING   Recycling Spot			綠在朗屏   回收流動點 GREEN @ LONG PING   Recycling Spot		
定時定點 Regular Spots			特設地點 Add-on Spots		
日/月 DD/MM	時間 Time	地點 Location	日/月 DD/MM	時間 Time	地點 Location
星期六 Saturday	14:30 — 17:30	天水圍復宏軒多層停車場對出空地(面向天瑞路) (Facing Tin Shui Road), Tin Shui Wai.	20/4	14:30 — 17:30	元朗政府合署對出 Pavement outside Yuen Long Government Offices, Yuen Long
特設地點 Add-on Spots			25/4	10:00 — 13:00	康村市友恭堂前球場 Football Pitch outside Yau Kung Tong, Ha Tsuen Shi
日/月 DD/MM	時間 Time	地點 Location	27/4	14:30 — 17:30	元朗政府合署對出 Pavement outside Yuen Long Government Offices, Yuen Long
4/4	10:00 — 13:00	天水圍天悅輕鐵站對出空地 Open area outside Tin Tui Light Rail Stop, near Tin Ching Estate, Tin Shui Wai.			
6/4	14:30 — 17:30	元朗政府合署對出 Pavement outside Yuen Long Government Offices, Yuen Long			
11/4	10:00 — 13:00	康村市友恭堂前球場 Football Pitch outside Yau Kung Tong, Ha Tsuen Shi			
13/4	14:30 — 17:30	元朗政府合署對出 Pavement outside Yuen Long Government Offices, Yuen Long			
18/4	10:00 — 13:00	天水圍天悅輕鐵站對出空地 Open area outside Tin Tui Light Rail Stop, near Tin Ching Estate, Tin Shui Wai.			
	14:30 — 17:30	天水圍天瑞商場對出(歡樂廣場) Open area outside Tin Shui Centre, Tin Shui Wai.			

Figure 4.55 Reading corner in GREEN@YUEN LONG. Source: Taken on 11/3/2023.





During the field visit, I participated in vegetarian cooking workshop organised by GREEN@YUEN LONG on 11<sup>th</sup> March ,2023 (Figure 4.56-4.58). The message of upcycling and having green lifestyles were effectively explained to the visitors.

Figure 4.56 Ingredients of the Korean Kimchi vegan pancake workshop in GREEN@YUEN LONG. Photo Source: Taken on 11/3/2023.



Figure 4.57 Pan-frying the Korean Kimchi vegan pancake workshop in GREEN@YUEN LONG. Photo Source: Taken on 11/3/2023.



Figure 4.58 Message of having green lifestyle in GREEN@YUEN LONG Photo. Source: Taken on 11/3/2023.

**綠在元朗**  
GREEN — YUEN LONG

**畜牧業損害動物權益**

食力 foodNEXT

日期: 2018年05月

智會  
Hong Chi Association  
提供智識 FOR people with intellectual disabilities

**人道飼養與一般飼養方式的差異**

格子籠飼	飼養方式比較	人道飼養
食物與水	食物	營養充足均衡的食物與水
狹窄籠子 每隻雞面積450cm <sup>2</sup> 左右	飼養空間	可充分活動的空間 每隻雞面積應超過750cm <sup>2</sup>
會剪喙剪爪避免雞隻互啄	剪喙剪爪	只能在雞隻幼時修剪一次喙部
無相關措施	表現自然行為	提供棲架給雞隻站立 提供隱蔽的產蛋箱 提供雞隻抓爬沙浴等娛樂
停止餵食飼料飲水 強迫雞隻快速換羽 以能再繼續高效率產蛋	換羽	不得強制換羽

資料來源：社團法人台灣農業標準學會秘書長廖麗元提供。《食力》整理製表。

為了要讓乳牛不斷分泌乳汁，畜牧場必須不斷地配種，好讓母牛懷孕分泌乳汁。

為了滿足消費者對於「活魚」的需求，業者會將活魚的嘴唇穿線拉到魚尾，把魚綁成彎月型延長死亡時間。

## (2) Waste reduction and recycling facilities

Recycling facilities for CGSs support ten types of recyclables, eight of which may be recycled at any time: wastepaper, plastics, metals, glass bottles, beverage cartoons, electrical devices, rechargeable batteries, and fluorescent bulbs and tubes. Also, there are collection for the exchange of used items in GREEN@YUEN LONG and GREEN@ YUEN LONG HUI, the

collection of used books ,used toys and used clothes is encouraged. The public is encouraged to donate the aforementioned items to the CGSs for recycling.

Recycling facilities were provided in the CGSs in Yuen Long where have installed smart balance (Figure 4.59) and larger recycling bins. Also, GREEN@YUEN LONG has the first smart recycling bins for plastics and paper which is combined the function of weighting, rewarding, and recycling in Yuen Long District (Figure 4.60). Residents can drop off their recyclables directly in waste separation facilities (Figure 4.61-4.66). There are some different separations in these three CGSs. In GREEN@ YUEN LONG, there are recycling boxes for bottle cap (Figure 4.62), polyfoam (Figure 4.63) and plastic bottles and other plastics, while there also was a reverse vending machines (RVMs) available (Figure 4.64). In GREEN@LONG PING, there are recycling facilities for plastic bottle, hard plastic (e.g., yoghurt pots) and soft plastics (e.g., plastic bags), People who bring electrical devices, computer equipment, small furniture, used books, and used clothes to the offices and must request assistance (Figure 4.67).

Besides, in order to promoting green lifestyle which aimed to reduce waste production, there was water dispensers available in each CGSs in Yuen Long District (Figure 4.68),which people can bring their own bottle and reduce the use of plastic bottle. And, because having a larger space, GREEN@YUEN LONG has a garden for planting organic plants to introduce organic farming and use as ingredient in soap making workshops which is an open space for relaxation (Figure 4.69).

Figure 4.59 Small balance in GREEN@LONG PING. Source: Taken on 1/3/2023.



Figure 4.60 Smart recycling bin for plastic bottle in GREEN@YUEN LONG. Source: Taken on 15/2/2023.





Figure 4.61 waste separation facilities in GREEN@YUEN LONG. Source: Taken on 15/2/2023.



Figure 4.62 waste separation facilities in GREEN@YUEN LONG. Source: Taken on 15/2/2023.



Figure 4.63 waste separation facilities in GREEN@YUEN LONG. Source: Taken on 15/2/2023.



Figure 4.64 reverse vending machines (RVMs) in GREEN@YUEN LONG. Source: Taken on 15/2/2023.





Figure 4.65 waste separation facilities in GREEN@YUEN LONG HUI . Source: Taken on 25/2/2023.



Figure 4.66 waste separation facilities in GREEN@LONG PING . Source: Taken on 1/3/2023.

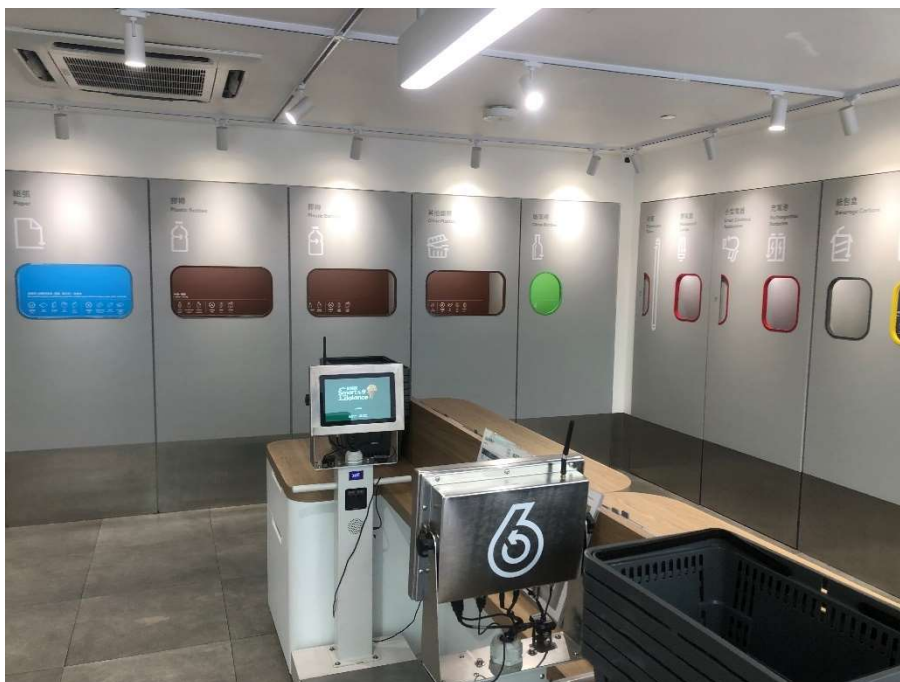


Figure 4.67 large recyclables storage in GREEN@YUEN LONG. Source: Taken on 15/2/2023.



Figure 4.68 water dispensers in GREEN@YUEN LONG. Source: Taken on 25/2/2023.





Figure 4.69 garden in GREEN@YUEN LONG. Source: Taken on 15/2/2023.



### (3) CGSs' popularity

I observed the popularity of CGSs by visiting those CGSs on weekdays and weekends. The GREEN@YUEN LONG has extremely few visits on weekdays (Figure 4.70). The situations were considerably better in GREEN@YUEN LONG and GREEN@LONG PING (Figure 4.71), where residents often bring their recyclables for recycling. However, the recycling spots organised by GREEN@YUEN LONG has more visitors (Figure 4.72). Meanwhile, the number of visitors increased on weekends, particularly on days of environment-educational programmes and feature events were held (Figure 4.73-4.76). Sometimes, guide tours and group visits conducted occasionally at CGSs led to an increase in visitor attendance (Figure 4.77).

Figure 4.70 visitors in GREEN@YUEN LONG HUI. Source: Taken on 15/02/2023





Figure 4.71 visitors in GREEN@YUEN LONG HUI after a workshop. Source: Taken on 25/02/2023



Figure 4.72 on of the recycling spot in Yuen Long District. Source: Taken on 1/3/2023



Figure 4.73 Featured event for exchanging second-hand toys and books in GREEN@YUEN LONG. Source: GREEN@YUEN LONG Facebook on 25/02/2023



Figure 4.74 Featured event for exchanging second-hand toys and books in GREEN@YUEN LONG. Source: Taken on 25/02/2023.



Figure 4.75 Featured event for exchanging second-hand toys and books in GREEN@YUEN LONG. Source: Taken on 25/02/2023.

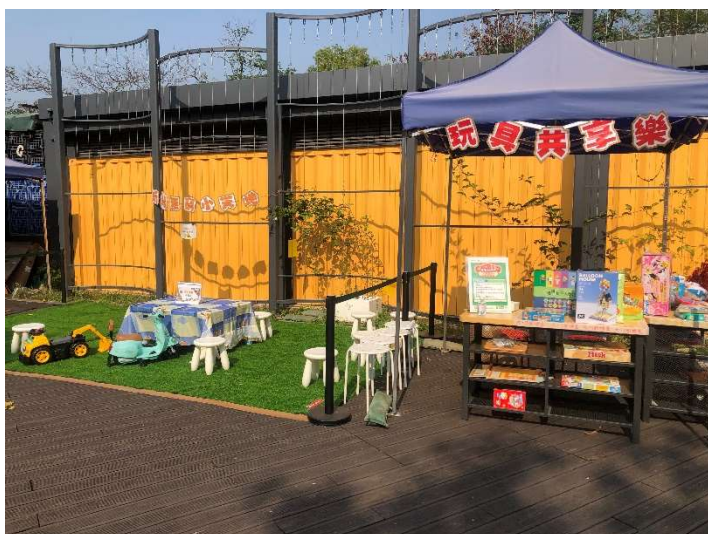




Figure 4.76 Featured event for exchanging second-hand toys and books in GREEN@YUEN LONG. Source: Taken on 25/02/2023.

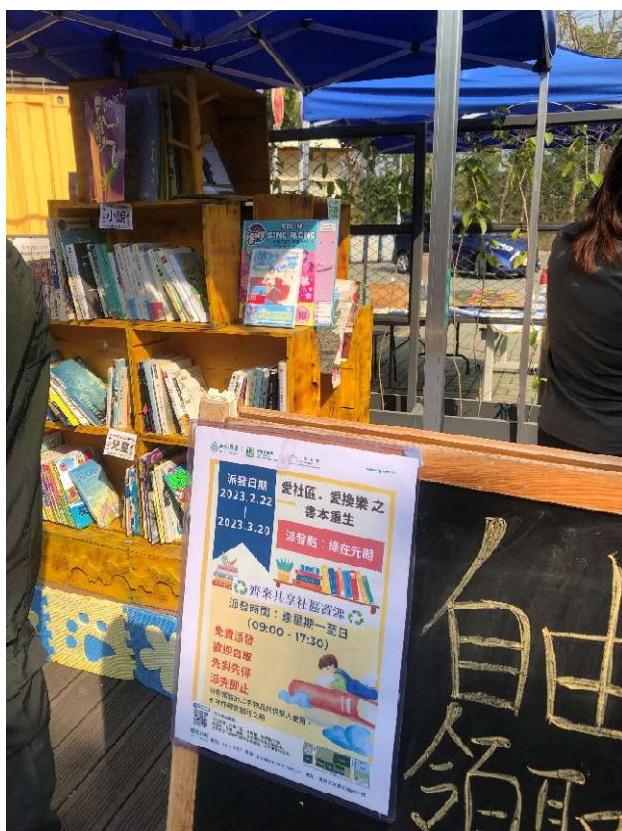


Figure 4.77 Screenshot of Google form for joining GREEN@YUEN LONG guided tour

導賞活動 x 工作坊  
本月可參加之工作坊  
咖啡渣吸濕除臭瓶

活動日期 \*

4月7日(五) 12:00-12:45 \*餘3位

所選工作坊 \*

☐ 導賞團 + 咖啡渣吸濕除臭瓶

參加人數 \*

☒ 1  
☐ 2  
☐ 3

接收確認申請通知 \*

☐ 電話  
☐ Whatsapp

同意以Whatsapp廣播訊息收取「綠在元朗」資訊  
\*必需加入有聯絡人才可收取「綠在元朗」資訊

\*

☐ 已加入聯絡人  
☐ 同意 \*必需自行加入通訊錄 - 「6997 2665」  
☐ 不同意

## 5. Discussion

Community green stations are designed to improve environmental education and strengthen the collection of recyclables (Environmental Protection Department, 2023). To explore the performance of CGSs and the degree to which they achieve their goals, the performance of environment-educational services and recycling facilities has been examined. Recognition is an essential element for a CGS to be successful which can maintain recycling and education services are provided to all residents as well as visitors. Thus, the publicity of CGSs is also included below.

### 5.1 Publicity of CGSs

#### Popularity of CGSs

Six questions about the sources of knowing waste reduction and recycling in Hong Kong and popularity of CGSs were included in the survey.

First, according to the findings of the study, several demographic factors were found to have a positive correlation with the sources of knowledge about waste reduction and recycling in Hong Kong. These factors include age, occupation, type of housing and monthly income. Interestingly, it was found that monthly income was the most significant factor affecting the performance of these sources of knowledge, as highlighted in Table 4.2. It is important to note that there are various sources of knowledge regarding waste reduction and recycling, such as radio, TV, newspaper, and magazines. Thus, it is crucial to examine and understand the factors that influence the performance of these sources, in order to promote sustainable waste management practices in Hong Kong. Further research is needed to explore how these factors may differ across different population groups and how they can be leveraged to enhance waste reduction and recycling efforts in the community, which would be discussed in section 6.2.

Second, over 170 of 208 participants claimed to have heard of the GREEN@YUEN LONG, GREEN@YUEN LONG HUI or GREEN@LONG PING, showing that more than third

quarter of the participants were familiar with the CGSs (Figure 4.2). A follow-up question was asked to see if people know the precise locations of the stations. The findings indicated that 66% of participants knew where the CGSs were located, whereas quite a few had not heard the CGSs in Yuen Long (Figure 4.4). Regarding to the operations of CGSs in Yuen Long have been established at least one year, the findings indicate a high level of CGSs popularity. Also, in the question of asking whether people were likely to visit the CGSs. Over 60% of participants said they were likely or very likely to visit the CGSs (Figure 4.3). Moreover, the number of visitors to the GREEN@YUEN LONG is significantly lower than that of the other two CGSs, as demonstrated by the operational data presented in Appendix A (Table 8.21), which reveals the GREEN@YUEN LONG HUI and GREEN@LONG PING are increasing while that of GREEN@YUEN LONG remains between 15000 and 18000 visitors from second quarter of 2021 to second quarter of 2022. The lack of popularity of the GREEN@YUEN LONG is mostly related to accessibility issues, which will have a direct effect on public engagement in services available by CGSs onsite.

#### Publicity of Events Held by CGSs

In Figure 4.15, the participants' reasons for visiting the CGSs were determined by a question. The survey found that approximately 60% of participants agreed or strongly agreed that they frequented the CGSs because they wanted to participate in the environment-educational events offered by the CGSs. This figure is quite significant, indicating that a majority of visitors are motivated by the educational aspects of the CGSs. However, it should be noted that 10% of participants did not express an interest in joining the events in CGSs. This suggests that a small percentage of visitors may be more interested in other aspects of the CGSs, such as their second-hand market.

#### Factors Influencing the Performance of Publicity of the CGSs

By analysing the data, it was determined that the age group, occupation, and monthly income were three main factors affecting the publicity in performance of CGSs. Regarding age, there

was a there was a statistically significant correlation ( $p < 0.05$ ) between participants' age and effective ways of learning about CGSs in Hong Kong. The findings indicated that in the sources of information about the CGSs mainly is delivered via TV, radio, pass by and interpersonal relationship. It means there is insufficient mass medica advertising. The CGSs should be presented to the public via different ways in order to overcome this obstacle. So, CGSs should be marketed through different mediums depending on the occupation and income level of the residents. For example, if the residents are low-income earners, it may be more effective to promote through radio as opposed to more expensive mediums like TV. Overall, a more targeted approach is needed to effectively promote CGSs to the public.

## **5.2 Performance of Envrionment-educational services**

### Review on the performance of Envrionment-educational services

Visitors and participants are critical components of envrionment-educational programs. Their opinions are crucial for the performance evaluation since they are the ones experiencing the service. Visitors and participants were asked to evaluate both the CGS's exhibits and services of envrionment-educational (if they joined before). Considering the exhibits shown at the CGSs in Yuen Long District , the average score of 3.56 indicated that visitors were slightly more satisfied than average (Table 4.20). Other participants suggested that the exhibits should be presented more attractive, and that the exhibition's information should be comprehensive and diversified. Among 108 participants in questionnaire who went to CGSs before, more than half of them though the exhibits were good or exceptionally good, while some think they were negative or fair. The results suggest exhibit advancements are possible.

Second,visitors and residents gave the envrionment-educational events a mideium mean score (3.65), indicating that they were slightly ha-ppy with the events (Table 4.20). However, under the regulations in COVID-19, there was limited quotes for public to join the events such as there are only eight people can join the workshops and four people can join the guided tour in GREEN@YUEN LONG. It was believed that the participation rate was low and that the

message of environmental awareness and conservation, especially waste reduction and recycling, could only be effectively shared to more people who joined the events.

The CGS operators should thus look for ways to engage visitors in environment-educational events. The mean score was between fair and good, indicating the further promotion is required for three CGSs in Yuen Long District.

Also, as a participant and observer during field visits, the influence of the environmental environment-educational service could be immediately viewed and experienced.

The environmental information displayed focused on these recyclable materials, while other kinds of details are absent such as further treatment of recyclables. Due to the limited breadth of the exhibitions, the CGS's environment-educational engagement has been significantly weakened. Concerning environment-educational events, the vegetarian cooking workshop instructions are clear and simple, as well as the featured events in GREEN@YUEN LONG a large number of residents. In response to the opinions collected from three CGSs in Yuen Long, the idea of waste management hierarchy and green lifestyles is continuously integrated into educational events, and a regular event for the exchange of used items is organised, especially before the COVID-19.

Based on visitor opinions and observations collected during field visits, environment-educational events are quite effective. Nonetheless, further promotion is necessary, and the information of the displays should be improved. For recommendations and suggestions can be referred to Section 6.2.

#### Factors Influencing the Performance of environment-educational services

Section 4 identifies a variety of factors that might impact the performance of environment-educational services. In this section, participants' behaviours and attitudes toward waste reduction and recycling are evaluated. Evaluating knowledge of the CGSs, questions were asked to determine the visitors' knowledge with the

recyclable materials collected by CGSs and their locations. Over half of participants failed to correctly identify all kinds of recyclables supported by CGSs in Yuen Long District (Figure 4.41). Without a clear concept of the accepted types of recyclables, people's pro-environmental behaviour would be declined, resulting in a decrease in the quantity of recyclables collected.

Meanwhile, almost all visitors had positive attitudes towards recycling, according to the findings (Table 4.21). This enhances their pro-environmental behaviour, but there are still several factors that might have an impact on their behaviours.

### **5.3 Performance of waste reduction and recycling service**

#### Review on the performance of waste reduction and recycling service

Based on the performance data shown in Appendix A, three CGSs in Yuen Long District performed well in recyclable collection service. During the operation, they have collected an enormous number of recyclables and developed a better network for recyclable collection such as via recycling spots and in residential or institutional areas.

First, The visitors were asked to score the recycling facilities in the CGSs and provide feedback to the facilities if they had any

comments in order to better evaluate the waste recycling service offered by three CGSs. More participants in the three CGSs were satisfied with the on-site waste recycling service than with the environment-educational programme events and exhibits (Figure 4.23-4.25). Several responders noted that the recycling facilities were located in an exposed location and that their directions were clear and notable with reminder on door of waste separation bins.

Furthermore, during field visits to three CGSs in Yuen Long, observations on the recycling facilities were conducted. It was found that many GREEN@YUEN LONG HUI and GREEN@YUEN LONG PING visitors brought recyclables to the station for recycling. For GREEN@YUEN LONG, it is not true that the low number of visitors hinders the recycling facilities' use rate.

Instead of onsite waste separation facilities, the collection points such as recycling spots should be the main sources of recyclables.

To summarise the opinions of the visitors and observations recorded during field visits, the waste reduction and recycling service should be enhanced to improve in order to boost the operations of CGSs. For recommendations and suggestions can be referred to Section 6.2.

#### Factors affecting the Performance of waste reduction and recycling service

The performance of the waste reduction and recycling service was significantly impacted by the accessibility and convenience of the collection locations, the implementation of economic incentives, and the media.

First, in terms of accessibility and convenience, CGSs not only provide on-site recycling facilities, but also contribute to the development of the community's recycling collection network. Apparently, CGSs have responsibility for developing both residential and organisation collection points at the community, as well as establishing recycling spots in authorized public areas. The broad and accessible collection sites make recycling convenient for the public.

Second, regarding the introduction of economic incentive, CGSs in Hong Kong have carried out the GREEN\$ Electronic Participation Incentive Scheme since 2022 in order to boost recycling participation (Environmental Protection Department, 2022). By bring certain number of recyclables to the CGSs or recycling points, people can earn GREEN\$ points through the GREEN\$ Mobile app or GREEN\$ CARD such as 1kg of paper can get 10 points and 1kg of plastic bottles can get 80 points (Figure 5.1) . People can use the incentive programmes to redeem their "green points" for gifts such as foods, towels, etc (Figure 5.2). It provides economic incentives and motivates people to get involved in recycling actions and help recycling the low value recyclables.

Figure 5.1 GREEN\$ Conversion rates of recyclables



**GREEN\$**



### 獎賞兌換表


### GIFT REDEMPTION LIST



綠標貨積分 GREEN	獎賞物 Gift Items	A	或 or	獎賞物 Gift Items	B
150	印尼椰麵 Indonesian Noodle			幼鹽 (450克) Table Salt (450g)	
250	快樂通心粉 Pasta-Serve Macaroni			紙包燒豆奶 (250毫升) Soybean Milk (250-ml)	
300	卷裝廚紙 Roll Toilet Roll			上湯伊麵 Superior Soup Instant Noodle	
350	即食麵 Instant Noodle			即食米粉 Instant Rice Vermicelli	
400	廚房抹布 Domestic Kitchen Towel			穀物棒 Cereal Bar	
450	梳打餅 Savoury Cracker			砂糖 (450克) Granulated Sugar (450g)	
500	上海麵 Shanghai Noodle			草仔拉麵 Herbar	
1000	即沖燕麥飲品 Instant Oat Drink			頂級香米 (1公斤) Premium Fragrant Rice (kg)	
2000	環保手挽袋 Flea Hanging Bag			芥花籽油 (900毫升) Canola Oil (900ml)	
25	回收大走步同寄卡 GBA Card				
150	襪子鉛筆 Sneaky Pencil				
200	大洗免/慳BB拖蓋 Big Washer / Groupy Baggie			大堆免拼圖 (100塊) Big Washer Puzzle (100 pieces)	
350	大洗免棉質毛巾 Big Washer Cotton Towel			大堆免拼圖 (100塊) Big Washer Puzzle (100 pieces)	
2000	基本版回收大走步 (同寄卡) GBA Game - Basic Book (100 pieces)			加強版回收大走步 (同寄卡) GBA Game - Additional Book (100 pieces)	

1. 查帕爾明油的主要成分為正五元環醇類，  
其結構式為：  
The structure of the main component of Chaparrin oil is a five-membered ring alcohol.  
GRACON 1.46 is a software tool for the automatic generation of chemical structures.
2. 裝機有關，請查第 1 頁。

- 日常獎賞 Basic Gifts
- 精品獎賞 Special Gifts


**線在 區區**

**研學探寶**  
 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1

Moreover, the government is preparing to adopt MSW charging in late 2023 (Environmental Protection Department, 2022). Similar to Taiwan and South Korea, it is expected that the



amount of waste delivered to landfills would be drastically reduced and the amount of recyclables will grow dramatically. Public will take advantage of CGSs' recycling service, thus further enhancing CGSs' performance.

Then, people think that media is not enough for three CGSs in Yuen Long District. Even when the on-site recycling facilities and recycling spots are well-established, few people are aware of the schedule and use the service, except they search the information on Facebook ages. Refer to Section 5.3 for a review of CGS publicity in further detail.

Lastly, setting up CGSs can affect the recycling behaviours positively. In Figure 4.32-4.33, before setting up CGS, the largest portion of people (35%) reported recycling less than once a month, while 23% reported never recycling. After setting up CGS, the largest portion of people (28%) reported recycling once a week, while only 17% reported never recycling. Additionally, after setting up CGS, only 2% of people recycled once a day, while after setting up CGS, this percentage increased to 3%. The percentage of people who recycled once a month remained relatively constant, with 19% before and 27% after the setup of CGS. The results suggest that the establishment of CGS can make a positive impact on the frequency of recycling habits among the group of people surveyed, with more people reporting recycling once a week after the setup of CGS.

## **6. Conclusion**

### **6.1 Limitations of this study**

This research project has several limitations that need to be acknowledged. Firstly, the sample size of the questionnaire oriented towards visitors may not be representative of the entire population due to its small size. Furthermore, the questionnaire's level of confidence is only 85%, which is below the suggested level of 95%. This low level of confidence may be attributed to the difficulty of reaching the target group, given that many were reluctant to answer questions on the street and provide personal information. In order to address this limitation, future studies could consider providing more time for doing survey and using alternative methods, such as online surveys via different media platforms, to reach a larger and more diverse group of participants.

Secondly, there is a lack of prior research studies about community green stations (CGSs) in Hong Kong. Although scholars have been more interested in investigating food waste and municipal solid waste (MSW) charging in Hong Kong, there were few articles that mentioned CGSs, which were not updated. Therefore, the first-hand data collected in this study may not be comprehensive in discussing the performance of CGSs in Hong Kong to change public recycling practices. Future studies could benefit from a more thorough review of the existing literature on CGSs and waste management in Hong Kong to provide a more complete understanding of the topic.

Thirdly, the data collected by field visits might be subjective because all the data and experiences were obtained by a single researcher. This may have introduced bias into the data collection process, and there was no comparison or fixed indicator to measure the data of observations. To address this limitation, future studies could consider involving multiple researchers or using more objective measures to collect data.

Finally, the viewpoints of CGS operators, such as front-line staff, cooperating parties, and downstream recyclers, are not taken into account in this study. To provide a more

comprehensive analysis of the performance of CGSs in Hong Kong, future studies could consider conducting in-depth interviews with various stakeholders to gain insights into their perspectives on the topic. By addressing these limitations, future research could provide a more nuanced and complete understanding of the topic at hand.

## **6.2 Recommendations**

### **6.2.1 Publicity of CGS**

First, the suggestion is CGSs should organise several types of out-site environmental education activities in order to promote a culture of sustainable living in the community. According to the results of the questionnaire, accessibility and convenience is one of the factors that affect the performance of CGSs' popularity (Table 4.20). Also, people who live further away from Yuen Long district centre are less likely to be aware of their operation, educational activities should be utilised to increase the stations' recognition and deliver the information of environmental conservation without having to visit CGSs.

Secondly, it is important for CGSs to make more of an effort to develop their presence on social media platforms in order to increase public awareness and encourage greater participation in their services. The results of the questionnaire suggest that CGSs are not widely known due to inadequate promotion. As shown in Table 4.9, respondents indicated that information about CGSs is most effectively delivered through radio, television, and interpersonal relationships. In addition to using posters (Figure 4.50) and noticeboards (Figure 4.53) during field studies, CGSs could consider creating Instagram accounts for each GREEN@Community and distributing more posters in housing estates. By utilizing social media, CGSs can more easily connect with the public and share information about their services, accomplishments, and upcoming events. Instagram, for instance, is a popular platform for sharing visual content, which could be used to showcase the various community initiatives and projects undertaken by CGSs. Moreover, by consistently posting updates and engaging with followers, CGSs can establish a direct line of communication with the public

and foster a sense of community around their initiatives. By taking a more proactive approach to promotion, CGSs can help to build greater awareness and support for their initiatives and make a more significant impact in their communities.

#### 6.2.2 Performance of Environment-educational services

First, it is suggested that broader environmental protection-related topics be included in the exhibitions so that CGSs can more effectively facilitate environment-education. In CSGs, the exhibits of environmental education are limited and had the average score of 3.56 indicated that visitors were slightly more satisfied than average score (Table 4.20). Other participants suggested that the exhibits should be presented more attractive, and that the exhibition's information should be comprehensive and diversified. Besides, the concepts of reduction, reuse, and recovery (3R) waste management strategies should be presented as part of the events while the introduction of new government initiatives such as MSW charging and PRS should be displayed. More environmental protection messages be conveyed effectively to the public through improving the content of exhibits.

Second, it is suggested that providing more English materials in CGSs. Observably, both the exhibit summary and workshops were presented in Chinese. Although the majority of the target audience are Cantonese, it is equally essential to include English materials in the environment-educational events. Hong Kong is an international metropolis with a large number of foreigners with various cultural backgrounds, including an important number of foreign domestic workers (Census and Statistics Department, 2022). Foreign domestic workers are typically responsible for domestic waste management. The messages of sustainability, especially waste reduction and recycling must be shared to them. Therefore, more English materials must be included in CGSs in order to serve English speakers.

#### 6.2.3 Performance of waste reduction and recycling service

It is suggested that CGSs should support more kinds of recyclables in order to make recycling accessible to more individuals. At present, CGSs routinely allow the collection of paper,

metals, plastics, glass bottles, electrical and electronic products, rechargeable batteries, and fluorescent bulbs and tubes. Used books, toys, clothing, and small pieces of furniture are collected sometimes. There are also some suggestions about the niche recyclables such as snack bags and tin foil. Given that CGSs has covered eighteen districts in Hong Kong which can investigate the viability of new recyclables collection. Providing more niche recyclable collection services can make recycling easier and enhance the motivation in conduct waste reduction and recycling.

### **6.3 Conclusion**

As a large community-based project, CGSs encourage green lifestyles at the district level. In this research, the performance of three CGSs in Yuen Long are investigated. Despite the fact that the three CGSs have collected an increasing quantity of recyclables over the operating time, there is significant potential for them to improve their environmental education and recycling services. Furthermore, the lack of publicity around GREEN@YUEN LONG need additional consideration. It is crucial to increase advertising as well as promoting activities so that more people can know the CGSs services. Specifically, more activities should be conducted outside the GREEN@YUEN LONG to help those who live far from the Wetland Park. Also, CGSs are responsible for introducing the implementation of MSW charging via public environment-educational events and assisting the operation of PRSs in the collection of WEEE and glass bottles as part of the planning and implementation of future government policies. The aforementioned objectives can be achieved by a joint effort by the government ,residents and CGSs operators.

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## 8. Appendix

### Appendix A Operational Data of the GREEN@ YUEN LONG, GREEN@YUEN LONG HUI, GREEN@LONG PING

#### (1) First Quarter of 2017 (January - March 2017)

Table 8.1 Operational data of GREEN@YUEN LONG in the first quarter of 2017. Data was extracted from GREEN@YUEN LONG (2017) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	93
1.2	Coverage rate in residential area	67%
1.3	Organization collection points	13
2.	Operation of collection trucks	
2.1	Number of trips	58
2.2	Total number of operating hours	290 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	8607
3.2	Computer products	3565
3.3	Glass bottle	22896
3.4	Compact fluorescent lamps and tubes	564
3.5	Rechargeable batterie	102
3.6	Used books	1124
3.7	Used clothing	3840
3.8	Waste paper	1045
3.9	Waste plastics	414
3.10	Waste metals	198
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	56841
5.	Envrionment-educational services	
5.1	Number of educational events	22
5.2	Number of featured events	3
6.	Environmental performance	
6.1	Electricity used	4843



(2) Second Quarter of 2017 (April - June 2017)

Table 8.2 Operational data of GREEN@YUEN LONG in the second quarter of 2017. Data was extracted from GREEN@YUEN LONG (2017) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
1.	Collection points	
1.1	Residential collection points	104
1.2	Coverage rate in residential area	73%
1.3	Organization collection points	32
2.	Operation of collection trucks	
2.1	Number of trips	67
2.2	Total number of operating hours	335 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	5228
3.2	Computer products	2411
3.3	Glass bottle	49832
3.4	Compact fluorescent lamps and tubes	422
3.5	Rechargeable batterie	859
3.6	Used books	1052
3.7	Used clothing	258
3.8	Waste paper	4600
3.9	Waste plastics	545
3.10	Waste metals	835
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	8219
5.	Envrionment-educational services	
5.1	Number of educational events	45
5.2	Number of featured events	7
6.	Environmental performance	
6.1	Electricity used	9013

(3) Third Quarter of 2017 (July -September 2017)

Table 8.3 Operational data of GREEN@YUEN LONG in the third quarter of 2017. Data was extracted from GREEN@YUEN LONG (2017) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	112
1.2	Coverage rate in residential area	74%
1.3	Organization collection points	62
2.	Operation of collection trucks	
2.1	Number of trips	94
2.2	Total number of operating hours	564 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	14801
3.2	Computer products	3331
3.3	Glass bottle	53681
3.4	Compact fluorescent lamps and tubes	953
3.5	Rechargeable batterie	295
3.6	Used books	1489
3.7	Used clothing	505
3.8	Waste paper	7560
3.9	Waste plastics	883
3.10	Waste metals	878
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	7501
5.	Envrionment-educational services	
5.1	Number of educational events	49
5.2	Number of featured events	4
6.	Environmental performance	
6.1	Electricity used	11545

(4) Fourth Quarter of 2017 (October -December 2017)

Table 8.4 Operational data of GREEN@YUEN LONG in the Fourth Quarter of 2017. Data was extracted from GREEN@YUEN LONG (2018) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	111
1.2	Coverage rate in residential area	74%
1.3	Organization collection points	65
2.	Operation of collection trucks	
2.1	Number of trips	99
2.2	Total number of operating hours	594 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	14735
3.2	Computer products	
3.3	Glass bottle	57281
3.4	Compact fluorescent lamps and tubes	888
3.5	Rechargeable batterie	447
3.6	Used books	3591
3.7	Used clothing	6211
3.8	Waste paper	5899
3.9	Waste plastics	1258
3.10	Waste metals	2115
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	8176
5.	Envrionment-educational services	
5.1	Number of educational events	42
5.2	Number of featured events	6
6.	Environmental performance	
6.1	Electricity used	9484

(5) First Quarter of 2018 (January -March 2018)

Table 8.5 Operational data of GREEN@YUEN LONG in the first quarter of 2018. Data was extracted from GREEN@YUEN LONG (2018); and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	116
1.2	Coverage rate in residential area	75%
1.3	Organization collection points	71
2.	Operation of collection trucks	
2.1	Number of trips	100
2.2	Total number of operating hours	600hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	15082
3.2	Computer products	
3.3	Glass bottle	51008
3.4	Compact fluorescent lamps and tubes	787
3.5	Rechargeable batterie	298
3.6	Used books	1068
3.7	Used clothing	1694
3.8	Waste paper	6640
3.9	Waste plastics	1171
3.10	Waste metals	863
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	5383
5.	Envrionment-educational services	
5.1	Number of educational events	32
5.2	Number of featured events	4
6.	Environmental performance	
6.1	Electricity used	10274

(6) Second Quarter of 2018 (April – June 2018)

Table 8.6 Operational data of GREEN@YUEN LONG in the second quarter of 2018 Data was extracted from GREEN@YUEN LONG (2018) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	118
1.2	Coverage rate in residential area	>70%
1.3	Organization collection points	71
2.	Operation of collection trucks	
2.1	Number of trips	85
2.2	Total number of operating hours	510 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	10521
3.2	Computer products	
3.3	Glass bottle	55215
3.4	Compact fluorescent lamps and tubes	722
3.5	Rechargeable batterie	200
3.6	Used books	1441
3.7	Used clothing	1820
3.8	Waste paper	6183
3.9	Waste plastics	1757
3.10	Waste metals	547
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	5835
5.	Envrionment-educational services	
5.1	Number of educational events	52
5.2	Number of featured events	5
6.	Environmental performance	
6.1	Electricity used	11962

(7) Third Quarter of 2018 (July – September 2018)

Table 8.7 Operational data of GREEN@YUEN LONG in the Third Quarter of 2018 Data was extracted from GREEN@YUEN LONG (2018) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	121
1.2	Coverage rate in residential area	>70%
1.3	Organization collection points	73
2.	Operation of collection trucks	
2.1	Number of trips	82
2.2	Total number of operating hours	492 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	11902
3.2	Computer products	
3.3	Glass bottle	58993
3.4	Compact fluorescent lamps and tubes	808
3.5	Rechargeable batterie	121
3.6	Used books	2047
3.7	Used clothing	634
3.8	Waste paper	11175
3.9	Waste plastics	2924
3.10	Waste metals	862
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	5430
5.	Envrionment-educational services	
5.1	Number of educational events	49
5.2	Number of featured events	3
6.	Environmental performance	
6.1	Electricity used	12487



(8) fourth Quarter of 2018 (October - December 2018)

Table 8.8 Operational data of GREEN@YUEN LONG in the Fourth Quarter of 2018 Data was extracted from GREEN@YUEN LONG (2019) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	123
1.2	Coverage rate in residential area	>70%
1.3	Organization collection points	76
2.	Operation of collection trucks	
2.1	Number of trips	87
2.2	Total number of operating hours	522 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	17327
3.2	Computer products	
3.3	Glass bottle	63632
3.4	Compact fluorescent lamps and tubes	749
3.5	Rechargeable batterie	475
3.6	Used books	987
3.7	Used clothing	971
3.8	Waste paper	8693
3.9	Waste plastics	3413
3.10	Waste metals	2321
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	5278
5.	Envrionment-educational services	
5.1	Number of educational events	44
5.2	Number of featured events	3
6.	Environmental performance	
6.1	Electricity used	7613



(9) First Quarter of 2019 (January -March2019)

Table 8.9 Operational data of GREEN@YUEN LONG in the First Quarter of 2019 Data was extracted from GREEN@YUEN LONG (2019) and the author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	123
1.2	Coverage rate in residential area	>70%
1.3	Organization collection points	79
2.	Operation of collection trucks	
2.1	Number of trips	84
2.2	Total number of operating hours	504 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	21139
3.2	Computer products	
3.3	Glass bottle	68151
3.4	Compact fluorescent lamps and tubes	792
3.5	Rechargeable batterie	299
3.6	Used books	1715
3.7	Used clothing	1008
3.8	Waste paper	8526
3.9	Waste plastics	3349
3.10	Waste metals	659
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	6126
5.	Envrionment-educational services	
5.1	Number of educational events	50
5.2	Number of featured events	3
6.	Environmental performance	
6.1	Electricity used	6518

(10) second Quarter of 2019 (April- June2019)

Table 8.10 Operational data of GREEN@YUEN LONG in the Second Quarter of 2019 Data was extracted from GREEN@YUEN LONG (2019) and the author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	127
1.2	Coverage rate in residential area	>70%
1.3	Organization collection points	80
2.	Operation of collection trucks	
2.1	Number of trips	78
2.2	Total number of operating hours	468 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	21538
3.2	Computer products	
3.3	Glass bottle	68790
3.4	Compact fluorescent lamps and tubes	843
3.5	Rechargeable batterie	255
3.6	Used books	298
3.7	Used clothing	935
3.8	Waste paper	10138
3.9	Waste plastics	4287
3.10	Waste metals	782
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	8328
5.	Envrionment-educational services	
5.1	Number of educational events	50
5.2	Number of featured events	3
6.	Environmental performance	
6.1	Electricity used	10528

(11) Third Quarter of 2019 (July -September 2019)

Table 8.11 Operational data of GREEN@YUEN LONG in the third quarter of 2019 Data was extracted from GREEN@YUEN LONG (2020) and the author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	128
1.2	Coverage rate in residential area	/
1.3	Organization collection points	81
2.	Operation of collection trucks	
2.1	Number of trips	72
2.2	Total number of operating hours	432 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	17255
3.2	Computer products	
3.3	Glass bottle	68656
3.4	Compact fluorescent lamps and tubes	645
3.5	Rechargeable batterie	310
3.6	Used books	665
3.7	Used clothing	467
3.8	Waste paper	14650
3.9	Waste plastics	4792
3.10	Waste metals	1051
3.11	Beverage cartons	
4.	Facility utilization	
4.1	Number of visitors received	6694
5.	Envrionment-educational services	
5.1	Number of educational events	28
5.2	Number of featured events	2
6.	Environmental performance	
6.1	Electricity used	12660

(12) First Quarter of 2020 (January -March2020)

Table 8.12 Operational data of GREEN@YUEN LONG in the First Quarter of 2020 Data was extracted from GREEN@YUEN LONG (2020) and the author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	129
1.2	Coverage rate in residential area	>70%
1.3	Organization collection points	84
2.	Operation of collection trucks	
2.1	Number of trips	38
2.2	Total number of operating hours	228 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	9765
3.2	Computer products	
3.3	Glass bottle	11843
3.4	Compact fluorescent lamps and tubes	374
3.5	Rechargeable batterie	248
3.6	Used books	1036
3.7	Used clothing	1058
3.8	Waste paper	6882
3.9	Waste plastics	3699
3.10	Waste metals	106
3.11	Beverage cartons	/
4.	Facility utilization	
4.1	Number of visitors received	10707
5.	Envrionment-educational services	
5.1	Number of educational events	14
5.2	Number of featured events	1
6.	Environmental performance	
6.1	Electricity used	8705

(13) second Quarter of 2020 (April- June 2020)

Table 8.13 Operational data of GREEN@YUEN LONG in the Second Quarter of 2020 Data was extracted from GREEN@YUEN LONG (2020) and the author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	129
1.2	Coverage rate in residential area	/
1.3	Organization collection points	86
2.	Operation of collection trucks	
2.1	Number of trips	63
2.2	Total number of operating hours	441
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	10617
3.2	Computer products	
3.3	Glass bottle	62057
3.4	Compact fluorescent lamps and tubes	993
3.5	Rechargeable batterie	520
3.6	Used books	475
3.7	Used clothing	960
3.8	Waste paper	11406
3.9	Waste plastics	4993
3.10	Waste metals	1252
3.11	Beverage cartons	182
4.	Facility utilization	
4.1	Number of visitors received	12836
5.	Envrionment-educational services	
5.1	Number of educational events	4
5.2	Number of featured events	2
6.	Environmental performance	
6.1	Electricity used	14506

(14) Third Quarter of 2020 (July -September 2020)

Table 8.14 Operational data of GREEN@YUEN LONG in the third quarter of 2020 Data was extracted from GREEN@YUEN LONG (2021) and the author of this paper reproduced a table.

		GREEN@ YUEN LONG
	Collection points	
1.1	Residential collection points	130
1.2	Coverage rate in residential area	/
1.3	Organization collection points	90
2.	Operation of collection trucks	
2.1	Number of trips	91
2.2	Total number of operating hours	546 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	11284
3.2	Computer products	
3.3	Glass bottle	85626
3.4	Compact fluorescent lamps and tubes	575
3.5	Rechargeable batterie	437
3.6	Used books	614
3.7	Used clothing	1031
3.8	Waste paper	10567
3.9	Waste plastics	6895
3.10	Waste metals	1341
3.11	Beverage cartons	494
4.	Facility utilization	
4.1	Number of visitors received	9038
5.	Envrionment-educational services	
5.1	Number of educational events	23
5.2	Number of featured events	2
6.	Environmental performance	
6.1	Electricity used	17961



(15) fourth Quarter of 2020 (October- December 2020)

Table 8.15 Operational data of GREEN@YUEN LONG in the fourth quarter of 2020 Data was extracted from GREEN@YUEN LONG (2021) and the author of this paper reproduced a table.

		GREEN@ YUEN LONG
1.	Collection points	
1.1	Residential collection points	130
1.2	Coverage rate in residential area	/
1.3	Organization collection points	92
2.	Operation of collection trucks	
2.1	Number of trips	95
2.2	Total number of operating hours	570 hr
3.	Amount of recyclables collected (kg)	
3.1	Electrical appliances	13982
3.2	Computer products	
3.3	Glass bottle	80271
3.4	Compact fluorescent lamps and tubes	528
3.5	Rechargeable batterie	350
3.6	Used books	985
3.7	Used clothing	272
3.8	Waste paper	11627
3.9	Waste plastics	9258
3.10	Waste metals	2153
3.11	Beverage cartons	607
4.	Facility utilization	
4.1	Number of visitors received	11711
5.	Envrionment-educational services	
5.1	Number of educational events	50
5.2	Number of featured events	1
6.	Environmental performance	
6.1	Electricity used	13012

(16) First Quarter of 2021 (January - March 2021)

Table 8.16 Operational data of the two CGSs in Yuen Long district in the first quarter of 2021 Data was extracted from GREEN@YUEN LONG (2021) ; GREEN@YUEN LONG HUI (2021) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG	GREEN@YUEN LONG HUI
	Collection points		
1.1	Residential collection points	132	30
1.2	Coverage rate in residential area	/	/
1.3	Organization collection points	92	32
2.	Operation of collection trucks		
2.1	Number of trips	96	/
2.2	Total number of operating hours	576 hr	/
3.	Amount of recyclables collected (kg)		
3.1	Electrical appliances	18534	9178
3.2	Computer products		5973
3.3	Glass bottle	78222	8400
3.4	Compact fluorescent lamps and tubes	259	143
3.5	Rechargeable batterie	402	32
3.6	Used books	/	/
3.7	Used clothing	/	/
3.8	Waste paper	15451	14314
3.9	Waste plastics	10651	41574
3.10	Waste metals	2300	2924
3.11	Beverage cartons	651	466
4.	Facility utilization		
4.1	Number of visitors received	15012	26015
5.	Envrionment-educational services		
5.1	Number of educational events	70	1
5.2	Number of featured events	2	/
6.	Environmental performance		
6.1	Electricity used	11577	/

(17) second Quarter of 2021 (April- June 2021)

Table 8.17 Operational data of the two CGSs in Yuen Long district in the second quarter of 2021 Data was extracted from GREEN@YUEN LONG (2021) ; GREEN@YUEN LONG HUI 2021) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG	GREEN@YUEN LONG HUI
1.	Collection points		
1.1	Residential collection points	135	31
1.2	Coverage rate in residential area	/	/
1.3	Organization collection points	94	31
2.	Operation of collection trucks		
2.1	Number of trips	106	/
2.2	Total number of operating hours	636 hr	/
3.	Amount of recyclables collected (kg)		
3.1	Electrical appliances	13490	8372
3.2	Computer products		3010
3.3	Glass bottle	74166	18824
3.4	Compact fluorescent lamps and tubes	247	160
3.5	Rechargeable batterie	301	59
3.6	Used books	/	/
3.7	Used clothing	/	/
3.8	Waste paper	17534	16818
3.9	Waste plastics	12107	50826
3.10	Waste metals	2542	5277
3.11	Beverage cartons	794	1297
4.	Facility utilization		
4.1	Number of visitors received	16022	47878
5.	Envrionment-educational services		
5.1	Number of educational events	84	2
5.2	Number of featured events	2	/
6.	Environmental performance		
6.1	Electricity used	17051	/

(18) Third Quarter of 2021 (July -September 2021)

Table 8.18 Operational data of the two CGSs in Yuen Long district in the third quarter of 2021 Data was extracted from GREEN@YUEN LONG (2021) ; GREEN@YUEN LONG HUI (2021) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG	GREEN@YUEN LONG HUI
1.	Collection points		
1.1	Residential collection points	138	28
1.2	Coverage rate in residential area	/	/
1.3	Organization collection points	97	35
2.	Operation of collection trucks		
2.1	Number of trips	104	/
2.2	Total number of operating hours	624 hr	/
3.	Amount of recyclables collected (kg)		
3.1	Electrical appliances	20073	8667
3.2	Computer products		5578
3.3	Glass bottle	75191	24283
3.4	Compact fluorescent lamps and tubes	401	323
3.5	Rechargeable batterie	639	162
3.6	Used books	14	/
3.7	Used clothing	/	/
3.8	Waste paper	20823	25457
3.9	Waste plastics	14260	54617
3.10	Waste metals	2853	7797
3.11	Beverage cartons	870	3280
4.	Facility utilization		
4.1	Number of visitors received	15839	48612
5.	Envrionment-educational services		
5.1	Number of educational events	76	11
5.2	Number of featured events	2	/
6.	Environmental performance		
6.1	Electricity used	19152	/

(19) Fourth Quarter of 2021 (October - December 2021)

Table 8.19 Operational data of the two CGSs in Yuen Long district in the Fourth Quarter of 2021 Data was extracted from GREEN@YUEN LONG (2022); GREEN@YUEN LONG HUI (2022) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG	GREEN@YUEN LONG HUI
	Collection points		
1.1	Residential collection points	138	40
1.2	Coverage rate in residential area	/	/
1.3	Organization collection points	101	33
2.	Operation of collection trucks		
2.1	Number of trips	105	/
2.2	Total number of operating hours	630 hr	/
3.	Amount of recyclables collected (kg)		
3.1	Electrical appliances	16056	5949
3.2	Computer products		9554
3.3	Glass bottle	80723	23047
3.4	Compact fluorescent lamps and tubes	378	160
3.5	Rechargeable batterie	329	175
3.6	Used books	51	/
3.7	Used clothing	620	/
3.8	Waste paper	18121	20620
3.9	Waste plastics	16854	59335
3.10	Waste metals	3762	7924
3.11	Beverage cartons	842	3280
4.	Facility utilization		
4.1	Number of visitors received	17174	47925
5.	Envrionment-educational services		
5.1	Number of educational events	48	15
5.2	Number of featured events	3	/
6.	Environmental performance		
6.1	Electricity used	13515	/

(20) First Quarter of 2022 (January - March 2022)

Table 8.20 Operational data of the three CGSs in Yuen Long district in the first quarter of 2022 Data was extracted from GREEN@YUEN LONG (2022) ; GREEN@YUEN LONG HUI (2022) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG	GREEN@YUEN LONG HUI
1.	Collection points		
1.1	Residential collection points	138	37
1.2	Coverage rate in residential area	/	/
1.3	Organization collection points	101	8
2.	Operation of collection trucks		
2.1	Number of trips	96	/
2.2	Total number of operating hours	576 hr	/
3.	Amount of recyclables collected (kg)		
3.1	Electrical appliances	15690	6662
3.2	Computer products		8977
3.3	Glass bottle	71913	19915
3.4	Compact fluorescent lamps and tubes	238	178
3.5	Rechargeable batterie	333	58
3.6	Used books	16	/
3.7	Used clothing	/	/
3.8	Waste paper	16598	23771
3.9	Waste plastics	13103	59771
3.10	Waste metals	2659	6234
3.11	Beverage cartons	767	2071
4.	Facility utilization		
4.1	Number of visitors received	15747	40393
5.	Envrionment-educational services		
5.1	Number of educational events	30	10
5.2	Number of featured events	1	/
6.	Environmental performance		
6.1	Electricity used	10968	/



(21) Second Quarter of 2022 (April- June 2022)

Table 8.21 Operational data of the three CGSs in Yuen Long district in the second quarter of 2022 Data was extracted from GREEN@YUEN LONG ; GREEN@YUEN LONG HUI (2022) ; GREEN@ LONG PING (2022) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG	GREEN@YUEN LONG HUI	GREEN@ LONG PING
	<b>Collection points</b>			
1.1	Residential collection points	143	32	54
1.2	Coverage rate in residential area	/	/	/
1.3	Organization collection points	102	26	52
2.	<b>Operation of collection trucks</b>			
2.1	Number of trips	110	/	/
2.2	Total number of operating hours	660 hr	/	/
3.	<b>Amount of recyclables collected (kg)</b>			
3.1	Electrical appliances	15804	6536	4380
3.2	Computer products		8177	3117
3.3	Glass bottle	77269	20359	11791
3.4	Compact fluorescent lamps and tubes	355	168	226
3.5	Rechargeable batterie	185	223	299
3.6	Used books	568	/	/
3.7	Used clothing	537	/	/
3.8	Waste paper	17174	26605	19824
3.9	Waste plastics	16068	61736	21936
3.10	Waste metals	3187	6362	2977
3.11	Beverage cartons	1016	1381	607
4.	<b>Facility utilization</b>			
4.1	Number of visitors received	17561	20111	28446
5.	<b>Envrionment-educational services</b>			
5.1	Number of educational events	31	20	/
5.2	Number of featured events	2	/	/
6.	<b>Environmental performance</b>			
6.1	Electricity used	13209	/	/

(22) Third Quarter of 2022 (July- September 2022)

Table 8.22 Operational data of the three CGSs in Yuen Long district in the second quarter of 2022 Data was extracted from GREEN@YUEN LONG ; GREEN@YUEN LONG HUI () ; GREEN@ LONG PING (2023) and The author of this paper reproduced a table.

		GREEN@ YUEN LONG	GREEN@YUEN LONG HUI	GREEN@ LONG PING
	Collection points			
1.1	Residential collection points	N/A		57
1.2	Coverage rate in residential area			
1.3	Organization collection points			52
2.	Operation of collection trucks			
2.1	Number of trips	N/A		
2.2	Total number of operating hours			
3.	Amount of recyclables collected (kg)			
3.1	Electrical appliances	N/A		6792
3.2	Computer products			4136
3.3	Glass bottle			16468
3.4	Compact fluorescent lamps and tubes			562
3.5	Rechargeable batterie			182
3.6	Used books			
3.7	Used clothing			
3.8	Waste paper			33090
3.9	Waste plastics			58018
3.10	Waste metals			5081
3.11	Beverage cartons			847
4.	Facility utilization			
4.1	Number of visitors received	N/A		37755
5.	Envrionment-educational services			
5.1	Number of educational events	N/A		/
5.2	Number of featured events			/
6.	Environmental performance			
6.1	Electricity used	N/A		

## Appendix B Questionnaire of the performance of CGSs in Yuen Long district

本人是香港教育大學地理教育系的五年級學生，現正進行一項關於環境地理的學術研究，旨在透過綠在元朗、綠在元朗墟和綠在朗屏的個案研究探討綠在區區在元朗區的有效性。懇請元朗區居民能幫忙填寫問卷(共 29 題)。已提供的資料是會絕對保密的，並只會作分析及統計之用，在研究完畢後將全部銷毀，萬分感激！感謝你們的支持！如對是此研究有任何查詢，歡迎請與本人陳曼琳聯絡(電郵: s1129283@s.edu.hk)。

### 第一部分

#### 1. 性別

男性	女性	不希望回答
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#### 2. 年齡

18 歲或以下	19-25	26-35	36-50	51-64	65 歲或以上
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#### 3. 教育程度

小學或以下	中學	大專	學士	碩士或以上
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#### 4. 住所鄰近的輕鐵站名

天富	天逸	天恆	濕地公園	天秀	天悅	頌富
天榮	銀座	翠湖	天湖	天慈	天水圍	天耀
樂湖	坑尾村	塘坊村	屏山	水邊圍	豐年路	康樂路
大棠路	元朗	洪水橋	天瑞			

#### 5. 職業

學生	教育	商業	公務人員	醫療行業	服務行業
退休人士	自由職業	其他:			

6. 每月港幣收入

\$10000 或以下	\$10001- 19999	\$20000-29999	\$30000-40000	\$50000 或以上	不希望回答
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7. 居住單位類型

公共房屋	居屋	私人樓宇	其他，請註明：_____
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**第二部分**

8. 你認為從哪種途徑能更有效認識到減廢回收？

	1	2	3	4	5	
	非常不有效	不有效	中立	有效	非常有效	不適用
學校						
電台廣播						
電視						
網站和社交媒體						
報紙和雜誌						
廣告、手冊和海報						
家人、鄰居、朋友和同事						
其他 (如沒有，請選擇“不適用”)						

9. 你有沒有聽說過綠在元朗、綠在元朗墟或綠在朗屏？

是	否
---	---

10. 綠在區區旨在加強社區的減廢教育和回收習慣。你有多大可能會去綠在區區？

極不可能	不太可能	中立	可能	極有可能
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11. 你認為從以下哪種途徑能更有效得知綠在區區的相關資訊？(可以選擇多項答案)

	1	2	3	4	5	
	非常不有效	不有效	中立	有效	非常有效	不適用
學校						
電台廣播						
電視						
網站和社交媒體						
報紙和雜誌						
廣告、手冊和海報						
家人、鄰居、朋友和同事						
路過						
回收活動/環保教育活動						
從不						
其他 (如沒有, 請選擇“不適用”)						

12. 你知道綠在元朗、綠在元朗墟或綠在朗屏的實際位置嗎？

是	否
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13. 你有沒有去過綠在元朗、綠在元朗墟或綠在朗屏？

是 (前往 Q14,)	否 (前往 Q20,)
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### 第三部分

14. 你最常去哪一間元朗區的綠在區區？(可選擇多於一項) (前往 Q15)

綠在元朗	綠在元朗墟	綠在朗屏	綠在區區回收流動點: _____
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15. 哪項陳述最能描述你選擇去綠在區區的原因？

a. 位置方便

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

b. 我對環保議題感興趣

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

c. 我想參與環保教育活動

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

d. 我想尋找合適的二手物品

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

e. 其他原因，請註明 (如沒有，請省略此。)

16. 你多久會去元朗區的綠在區區 (包括回收流動站) ?

一星期多於三次	一星期一或兩次	一個月一或兩次	少過一個月一次	從來沒有	其他
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17. 為什麼你會參與回收?

a. 提高環保意識

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

b. 位置便利 (回收環保站和回收流動點)

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用



c. 設施改善

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

d. 減少堆填區飽滿問題

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

e. 知道如何分類回收

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

f. 其他原因，請註明 (如沒有，請省略此。) \_\_\_\_\_

18. 什麼因素能吸引你常來綠在區區？

a. 提供更多可回收物的回收箱

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

b. 增設更多環保教育的展覽

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

c. 增設更多環保教育的設施

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

d. 舉辦更多環保教育活動

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

e.位於更便利的地方

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

f.獎勵回收物品的人

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

g. 相信回收物會得到妥善處理

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

h. 其他原因，請註明 (如沒有，請省略此。 ) \_\_\_\_\_

19. 請根據以下幾項對元朗區的綠在區區評分。

	1	2	3	4	5
	非常差	差	一般	好	非常好
功能 (綠在區區旨在加強社區的減廢教育和回收習慣)					
職員表現					
位置					
回收設施					
環保教育展覽					
環保教育活動					
回收流動站					

#### 第四部分

20. 在綠在區區設立之前，你和你的家人有多常將回收物帶到回收/再造公司、廢物分類回收桶或是回收機構及收集點回收？

一天一次	一星期一次	一個月一次	少過一個月一次	從來沒有	其他
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21. 在綠在區區 (包括回收流動點) 設立之後，你和你的家人有多常將回收物帶到回收/再造公司、廢物分類回收桶或是回收機構及收集點回收？

一天一次	一星期一次	一個月一次	少過一個月一次	從來沒有	其他
------	-------	-------	---------	------	----

22. 請排列你最常回收的回收物 (1=最常，8=最少)

紙張	塑料	鋁罐	玻璃	電池	紙包飲品盒	小型電器	其他 (例如：墨盒、家具等)：

23. 培養回收習慣是很重要的。

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

24. 我有責任透過回收將廢轉能

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

25. 我會分類回收物，並相應地放進正確回收箱

1	2	3	4	5	
非常不同意	不同意	中立	同意	非常同意	不適用

26. 你認為綠在區區的設立能否鼓勵市民參與回收？

是	否
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27. 你認為哪些政策的實施能有助提升綠在區區減廢的有效性？

	1	2	3	4	5	
--	---	---	---	---	---	--

	非常不有效	不有效	中立	有效	非常有效	不適用
生產者 責任計劃 (玻璃& 塑膠飲料容器,如 (入樽機))						
設立低碳 綠色科研 基金						
擴建環保園						
膠袋徵費						
管制即棄膠餐具						
垃圾徵費						
其他 (如沒有, 請選擇“不適用”)						

### 第五部分

28. 綠在區區可以回收以下哪些物品？(可選擇多於一項)

廢紙	塑膠	玻璃樽
金屬	充電池	電器
燈膽及光管	衣物	家具

29. 配對綠在元朗 (A)、綠在元朗墟 (B)和綠在朗屏 (C)的正確地址

a. \_\_\_\_\_ : 天水圍天華路 65 號

b. \_\_\_\_\_ : 元朗元朗安樂路 13-33 號遠東發展元朗大廈地下 3-8 號舖

c. \_\_\_\_\_ : 元朗教育路 87-99 號鴻發大廈地下 K 及 L 舖

謝謝回答這份問卷!