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**Re-establishing Ferry's Key Position in the
Sustainable Transport System of Hong Kong**

「**重塑渡輪成爲香港可持續交通模式的重要地位**」

Final Report

March 2020

Submitted by

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本研究項目（項目編號：2017.A8.069.18A）獲香港特別行政區政府政策創新與統籌辦事處公共政策研究資助計劃撥款資助。本項目由香港大學地理系盧佩瑩教授領導。本研究團隊由衷向五個渡輪營運商致謝（根據英文字母排序：富裕小輪有限公司、香港小輪(集團)有限公司、新世界第一渡輪服務有限公司、天星小輪有限公司及翠華船務(香港)有限公司）。他們參與是次研究的訪談，並對香港渡輪發展提供寶貴意見。另外，他們積極配合及安排本研究團隊在渡輪碼頭及渡輪上進行問卷調查。我們亦衷心感謝所有參與是次問卷調查的受訪者。最後，我們亦感謝各學生研究助理在本次研究的協助。

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EXECUTIVE SUMMARY

執行摘要

1. Abstract

Hong Kong has a valuable asset of the Victoria Harbour and is part of the extensive Pearl River system in South China. The Victoria Harbour and its surrounding waters, however, have not yet been fully utilized and integrated into the life of Hong Kong people. Together with the population living along the coastline of the Hong Kong Island, Kowloon peninsula and the New Territories, the number of people who may use water transport as their main mode of transport is substantial. Against the recent trends of increasing environmental awareness, heavy road congestion and over-crowding in metro and different forms of road-based public transport, ferry transport in Hong Kong has not fulfilled its potential promise as an attractive and sustainable travel mode. In fact, there is a continuous declining trend of ferry patronage since the 1950s. Since 2011, ferry services have been getting into financial deficits resulting in the Special Helping Measures (SHM) by the Hong Kong SAR Government to six routes – (i) Central–Cheung Chau, (ii) Central–Mui Wo, (iii) Central–Peng Chau, (iv) Central–Yung Shue Wan, (v) Central–Sok Kwu Wan, and (vi) Inter-islands. From both local and international experiences, government subsidies often become perpetual because renewals are “inevitable” under enormous pressures from different stakeholders. For the SHM, the major stakeholders include ferry operators, users (especially residents living on these outlying islands), district councillors and legislative councillors, among others. However, prolonged government subsidies to keep the ferry fares of selected routes arbitrarily low may distort the public transport fare structure, especially in relation to the fares on other ferry services and other major transit modes like MTR and buses.

With the opportunities and constraints of ferry development in Hong Kong, this study aims to explore and recommend effective strategies for supporting the long-term development of ferry services. To achieve this primary goal, this project collects primary data from ferry passengers (the demand side perspective) and local ferry operators (the supply side perspective) to understand the ferry business model more holistically. International case studies are also conducted so that we can identify the success factors of promoting vibrant ferry services. By the end of this project, we hope to explore potential ways of putting ferry services back to the sustainable transport hierarchy in Hong Kong, revitalizing the image of ferry for fulfilling the aspirations of its users, and bringing Hong Kong people closer to our beautiful waterfront. Our study suggests that (i) land-use planning (i.e. density and diversity) surrounding the pier and along the promenade, (ii) connectivity to activity locations and public transit locations from piers, (iii) service quality and the “ferry experience”, (iv) the business models and associated management strategies and (v) the role and commitment of

government in long-term ferry development are all key factors of ferry ridership and hence the sustainability of ferry as a sustainable transport mode in Hong Kong.

1. 摘要

維多利亞港是香港重要的天然資產，是華南地區廣泛的珠江河流系統一部分。可是，維多利亞港及周圍水域尚未完全融入香港人的生活。以港島、九龍半島及新界海岸線的人口計算，當中以渡輪作為交通工具的潛在人口是相當可觀的。儘管如此，渡輪服務在香港並不發達。另一方面，雖然市民環保意識逐漸增強，而且路面的公共交通系統越趨擁擠，香港渡輪服務並未達到成為具有吸引力的可持續發展交通模式。從 2011 年起，很多渡輪服務，特別是來往（一）中環至長洲、（二）中環至梅窩、（三）中環至坪洲、（四）中環至榕樹灣、（五）中環至索罟灣，和（六）橫水渡的航線一直存在財政赤字。這導致香港政府以補貼形式來幫助這些航線繼續營運。但是，一旦推出補貼政策，在營運商、乘客、區議員、立法機關及其他人的壓力下，繼續實行補貼政策往往「無可避免」。而且，政府長期以渡輪票價資助虧損的渡輪航線會扭曲整個社會公共交通票價的結構，令這些航線的票價比其他渡輪服務和其他公共交通工具（如港鐵和巴士）低廉，並與市場價格脫節。

因應在香港發展渡輪交通的機遇和限制，本研究旨在探討及提議有效提高渡輪財務可持續性的方法。本研究從本地渡輪乘客及渡輪服務營運商採集一手資料，從一個全面角度探討渡輪的營運模式。我們亦參考國際間不同城市發展渡輪交通的成功例子，從而瞭解當中的成功因素。本研究期望把渡輪交通重新置於香港可持續交通運輸系統中，振興渡輪服務的形象以達到用戶的期望，並使香港市民更能在日常生活中接觸美麗的海濱。本研究的結果顯示有多種關鍵因素是影響渡輪容量及渡輪服務的財務可持續性，包括（一）鄰近碼頭及海濱的土地規劃（密度及多元程度），（二）碼頭與活動地點及公共交通地點的連接度，（三）渡輪服務質素及乘客的整體「渡輪體驗」，（四）渡輪服務營運商的商業模式及其經營策略，及（五）政府在長遠渡輪交通規劃的角色及承諾。

2. Laymen Summary on Policy Implications and Recommendations

Upon the completion of this project, there are several policy implications:

- The local ferry development is under severe challenges due to declining patronage, increasing multimodal competition and a lack of long-term planning in the water transport system. It's high time to more fully develop the sustainable transport hierarchy in Hong Kong beyond just "railway as the backbone". A more place and people sensitive approach is required.
- The long-term survival of ferry business needs to fully integrate the perspectives of passengers, operators and the government. Solely relying on the strategies from the

operators cannot effectively tackle the challenge of declining patronage and its arising issues.

- The expectations and satisfaction from ferry passengers can be very different, depending not only on their socioeconomic characteristics, but also the trip purpose, travel routines and specific ferry routes.
- The interviewed operators in this study largely rely on income from tourists, rental income and advertisement. Local demand is not sufficient to support the business.
- Apart from the strategies devised by the ferry operators to improve service quality, the role of government in land-use planning, improving the walking experience around the piers, facilitating seamless transfer and investing in pier infrastructure and vessels is essential to promote viable ferry services.

Several key recommendations are suggested as follows:

- The government needs to establish a clear policy vision and define key objectives (both short-term and long-term) to integrate ferry transport into the public transport network. It's high time to more fully develop the sustainable transport hierarchy beyond just "railway as the backbone". A more place and people sensitive approach is required.
- The government should bring activities near the piers and along the promenade to increase the potential customer size, including diversified opportunities for working, shopping, recreation and leisure.
- The government needs to improve the walking environment surrounding the piers, such as developing a well-connected pedestrian network, sheltered walkways and direct walking routes to major activity locations. A more convenient, comfortable and safer walking experience is conducive to promoting ferry travel.
- According to the overseas experience, the government can invest in pier infrastructure upgrades/construction and purchase of new vessels. Ferry operators are contracted for operating the service at an expected fare and frequency. This can significantly reduce the financial burden of ferry operators. There should also be higher autonomy for ferry operators to manage the piers and surrounding areas, so as to maximise their income from shop rentals, advertisement and events.
- The ferry operators can improve the experience of passengers especially when passengers are waiting at the piers, such as providing adequate and clean toilets, offering free Wi-Fi and creating a more comfortable and spacious waiting area. In summary, a pleasant and special "ferry experience" should be provided.

2. 政策影響及建議總結

本研究提出多項對香港渡輪發展的啟示：

- 本地渡輪發展正面對嚴峻挑戰。客量持續下跌，與其他公共交通工具的競爭以及缺乏長遠的水上交通發展規劃乃重要原因。政府現在應該全面制定一個可持續發展的公共交通定位分級策略，而非以「鐵路成為客運系統骨幹」作為唯一公共運輸政策。我們需要一個更以人為本、以地方為本的持續運輸策略。
- 長遠的渡輪營運需要從綜合角度考慮，包括乘客、渡輪營運商以及政府。只透過渡輪公司制定的策略並不能解決客量下跌及其引伸之問題。
- 根據渡輪乘客不同的社會經濟背景，交通目的，交通習慣以及乘坐的渡輪航線，乘客對服務的期望及滿意條件可以有很大差別。
- 本研究受訪的渡輪服務營運商很大程度上依賴旅客票務收入、租金及廣告收入來經營。本地市民對渡輪服務的需求並未能足以支持渡輪業務。
- 除了渡輪營運商改善服務質素的策略外，政府在土地及海濱規劃，改善碼頭附近的步行環境，促進水上及陸上交通的無縫連接，以及對碼頭基建及客船的投資都在推動可持續發展的渡輪服務上擔當一個重要角色。

根據本研究的分析，現提出以下政策建議：

- 政府需要定立一個明確的渡輪政策願景，並擬定短期及長期目標把渡輪服務融入陸上公共交通系統。
- 政府需要在碼頭及海濱的附近土地增加不同的活動，包括工作，購物，娛樂及消遣用途，從而增加潛在需求。
- 政府需要改善碼頭附近的步行環境，例如構建一個完善的行人網絡、有蓋的行人路及更快捷連接主要活動地點的行人路。一個更方便，舒適及安全的步行體驗對鼓勵渡輪交通十分有利。
- 根據海外經驗，政府可以投資碼頭基建改善及開發計劃及購買新的客輪。渡輪營運商需要根據合約訂明的票價及班次提供渡輪服務。這能大大減低渡輪營運商在修復或改善基建投資所負擔的商業壓力。渡輪公司亦應自在碼頭及附近範圍有更大的管理權力，從而增加在商店租金、廣告及舉辦活動獲得的收入。
- 渡輪營運商可以改善旅客整體的體驗，尤其乘客在碼頭等候渡輪的時間。改善包括提供足夠及清潔的廁所，免費無線上網，設計一個更舒適及空間大的等候環境。換而言之，為乘客提供一個愉快和特別的「渡輪體驗」。

CHAPTER 1 INTRODUCTION

1.1 Background and project overview

Ferry transport was one of the most important transport modes in Hong Kong back in the 1950s. As shown in Table 1, ferry patronage in Hong Kong has dropped steadily since the opening of the **Cross-Harbour Tunnel** in 1972. In fact, the ferry patronage in Hong Kong dropped drastically by 26 percent in the last two decades (1998–2018). According to the Travel Characteristics Survey 2011 (TCS 2011), a territory-wide travel survey of over 35,000 households, ferry travel only represented one percent of the total mechanised trips in 2011 (Transport Department, 2011).

Table 1. Ferry patronage in Hong Kong (1958–2018)

Year	Ferry patronage (thousands)
1958	269,150
1968	217,816
1978	193,019
1988	123,322
1998	62,740
2008	53,835
2018	46,467

Source: Hong Kong Annual Digest of Statistics (1951–2019)

The continuous decline of ferry ridership and the extremely low mode share have given rise to significant challenges in ferry operation. Financial sustainability is one of them. In particular, the six outlying island ferry routes (i.e. Central–Cheung Chau, Central–Mui Wo, Central–Peng Chau, Central–Yung Shue Wan, Central–Sok Kwu Wan and Inter-islands) have been getting into financial deficits resulting in the Special Helping Measures (SHM), namely ferry subsidies, by the Hong Kong SAR Government since 2011. After the first launch of the SHM, the Government has continued to renew the ferry subsidy, with the latest round for the three-year licence period of 2017-2020. Inclusive of the contingency provision, the subsidy cap requested from the Legislative Council has risen from a total of HK\$190 million (2014–2017) to HK\$410 million (2017–2020). The SHM of the Government to the six ferry routes will expire again in 2020. Based on both local and international experiences, government subsidies often become perpetual because renewals are “inevitable” under enormous pressures from different stakeholders. For the SHM, these stakeholders may include ferry operators, users (especially residents living on these outlying islands), district councillors and legislative councillors, among others. However, prolonged government subsidies to keep the ferry fares of selected routes arbitrarily low may distort the public transport fare structure, especially in relation to the fares on other ferry services and other major transit modes like the Mass Transit Railways and buses.

The long-term viability of ferry services has been taken seriously by the government in the past few years. In the Policy Addresses of 2017, 2018 and 2019, there are some policy measures suggested to help the ferry industry to become more financially sustainable in the long term. The strategic directions, summarized in Table 2, ranged from replacing the old vessels with the more environmentally-friendly vessels, integrating water passenger transport into promenade development, re-commissioning potential ferry routes, to investigating the feasibility of water taxi development.

Table 2. Extracts about ferry development in the Policy Addresses

Year	Content about the ferry industry
2017	<ul style="list-style-type: none"> • ... we will continue to take forward ... the study on the long-term operation model of outlying island ferry services. • ... we will explore the launch of pilot schemes for local ferries and new government vessels to adopt green technologies to reduce their emissions.
2018	<ul style="list-style-type: none"> • We are working towards enhancing vibrancy of the Hung Hom harbourfront, through preparing for re-commissioning the “Central-Hung Hom” ferry route and launching a pilot “water taxi” service plying Kai Tak, Hung Hom, Tsim Sha Tsui East, West Kowloon and Central; and through injecting commercial elements into the Hung Hom (South) Pier. Besides, the Government is studying the long-term operation model for outlying island ferry routes and will announce the results in the first half of 2019. • Under the works for the new harbourfront in Wan Chai North to be launched next year, two promenades of different themes will be constructed and upon their completion by 2021, the three-kilometre waterfront areas from Sheung Wan to Wan Chai Ferry Pier will be linked up. We are also refining the proposed alignment of the waterfront boardwalk on Island East and will start the detailed design work once the proposal is endorsed. • Next year, enhancement works at the waterfront near Hoi On Road in Tsuen Wan will commence in phases, while the funding application for Hoi Sham Park extension works in To Kwa Wan will also be tabled at the LegCo. The Energising Kowloon East Office is inviting non-profit-making organisations to operate a weekend flea market at the Kai Tak airport runway tip. As for the proposed urban park in front of Hung Hom Ferry Pier, we will invite interested parties to submit expressions of interest later this year on the design and operation model.
2019	<ul style="list-style-type: none"> • Third, in view of the operating difficulties faced by the outlying island ferry services in Hong Kong, the Government has been providing Special Helping Measures to six outlying island ferry routes since 2011 in order to maintain services and reduce the impact of fare increases on passengers. We will extend these measures to eight other outlying island ferry routes. Annual expenditure for subsidising these 14 ferry routes is about \$260 million. We will also replace the entire fleets of 11 ferry routes and introduce greener vessels within around a decade from 2021 in two phases, which involves the purchase of 47 new vessels to enhance service quality and promote environmental protection.

Source: HKSAR Government (2017; 2018; 2019)

In wake of the challenges of ferry development and the government's initiatives of enhancing the financial viability of ferry service, the overarching goal of this project is to explore the potential ways of putting ferry services back to the sustainable transport hierarchy in Hong Kong, revitalizing the image of ferry for fulfilling the aspirations of its users, and bringing Hong Kong people closer to our beautiful waterfront. To achieve this, we collected primary data from ferry passengers and ferry operators to better understand the business model of local ferry operators. Moreover, we conducted a spatial analysis of population demand profiling in Hong Kong, and case studies of ferry business models overseas. As a first but important step to revitalise ferry services in Hong Kong, our findings will provide much-needed research findings for the government to make well-informed decisions of balancing different needs and expectations of the society. There will be a need to engage the general public and to fine-tune the recommendations of this report. If appropriate actions are taken, the findings of this project can provide insights on the ways of further strengthening the bond between Hong Kong people and the Victoria Harbour, together with its surrounding waters. This is highly consistent with the Hong Kong 2030+ vision of capitalizing on the city's blue assets (Development Bureau and Planning Department, 2016). The findings of this research will provide more information for shaping an urban form that puts the Victoria Harbour closer to the heart and the everyday life of Hong Kong people.

1.2 Objectives

In order to address the upcoming challenges and devise effective strategies of promoting ferry development in Hong Kong, this research has four major objectives. They are:

- (a) To understand the current and potential demand of ferry services in Hong Kong:** The current ferry patronage of specific routes needs to be examined. In order to investigate the current and potential demand for ferry services, it is important to understand the relationship between ferry patronage and the dynamics of two major demand factors – population and employment. In relation to the coastal areas of Hong Kong, there has been a redistribution of residential and employment opportunities over the last decade. Moreover, there are a number of new development areas along the promenade such as West Kowloon (West Kowloon Cultural District) and East Kowloon (Kai Tak and Kwun Tong). These areas, with the higher development density and diversity, may generate potential demand for new ferry services.
- (b) To analyse the existing ferry services (including trends, patterns, strengths and challenges) and associated business models:** While there are some initiatives to promote ferry transport in Hong Kong, there is a lack of understanding in the current ferry services from the passengers' and ferry operators' point of view. This is a fundamental step to identify

the priority areas for improvement and major obstacles of ferry development. In particular, this study aims to extract user perceptions from both frequent and non-frequent ferry travellers, as it is expected that their concerns are somehow different. How to make the current ferry travel more satisfactory (frequent) and attract people to travel by ferry as their main transport modes (non-frequent) are both relevant. For ferry operators, this study tries to understand the business models and how they address the current (also upcoming) challenges. This will be an important step for the government to devise effective and target-specific strategies.

- (c) To examine and learn from overseas experience:** Since the past decade, there have been an expansion of ferry services in many coastal cities. With the relative success of Brisbane, New York and San Francisco in enhancing ferry patronage and improving service quality, it will be useful to investigate further about the ferry operators' business models and the specific government initiatives in fostering ferry development. In particular, this study endeavours to analyse the role of ferry operators and the government in terms of pier management, capital investment and supporting measures (such as planning near the piers). Common favourable conditions will be summarised and reported.
- (d) To make recommendations of putting ferry services back to the sustainable transport hierarchy in Hong Kong:** Upon the completion of this project, the major findings will provide new insights of re-establishing the role of ferry service in the public transport hierarchy in Hong Kong. Ultimately, this study aims to provide sensible and effective recommendations that different parties can act upon and contribute towards the viability of ferry services, including the government, government advisory bodies, ferry industry and the general public.

1.3 The Sustainable Transport Transition

The topic of this project is important in Hong Kong because modern ferry transport aligns well with the principles of **transport sustainability**. It has high potential to contribute to comprehensive sustainability including the environmental, economic and social dimensions (Loo, 2018):

- (a) Environment:** Ferry transport can contribute to transport decarbonisation (Loo and Banister, 2016), as it can generate lower carbon emission per passenger-km than railways and buses if there is sufficient patronage and the use of less carbon-intensive fuels (Sims et al., 2014).
- (b) Economic:** Ferry transport can potentially stimulate promenade development by improving the accessibility, and hence create land value capture opportunities (Loo et al.,

2018). Empirical evidence suggest that ferry transport can help enhance the property values near the piers (NYCEDC, 2013b; Tsai et al., 2015). Also, water transport is favourable to tourism development, since a lot of passengers take ferries for recreational and leisure purpose (e.g. enjoy the views of skyscrapers and skylines and proximity to nature) (Tanko and Burke, 2017; Thompson, Burroughs and Amythe, 2006).

(c) Social: Ferry transport can facilitate intra-city movement and enhance job accessibility. In particular, much of Hong Kong’s central business district (CBDs) and major job centres is of proximity to water. Also, ferries can enhance the travel experience of passengers, improve quality of life and provide multiple user benefits (such as time savings and comfort) (NYCEDC, 2013a; NYCEDC, 2013b).

Notwithstanding the potential sustainability benefits offered by waterborne transport, ferry transport is not fully integrated in the public transport system of Hong Kong. Since the announcement of the third Comprehensive Transport Strategy (CTS-3), ferry transport is only positioned as a **supplementary** transport mode. The major functions of ferry transport are two-folded: the *inner harbour services* are “**alternative** public transport services to rail and road-based harbour-crossing services”, whereas the *outlying island routes* “provide public transport services that are **basically essential** for the outlying islands” (THB, 2017).

In the recently published Public Transport Strategy Study (PTSS), the **public transport hierarchy** remains basically “untouched” following the principle of “railway as the backbone”, alongside transit-oriented development (THB, 2017). In both CTS-3 and PTSS, “At the top of this hierarchy is heavy rail as it operates on dedicated rail corridor, providing high capacity, convenient and emission-free services. The next level comprises franchised buses and Light Rail. They serve as mass carriers and provide feeder services to heavy rail. **Other public transport services basically play a supplementary role ... ferries provide outlying island passengers with essential transport services and cross harbour passengers with another modal choice through inner harbour routes ...**” (THB, 2017, pp.1). As of 2018, MTR takes up a significant proportion of mode share accounted for 42 percent. Franchised buses take up a third of the average daily passenger journeys.

Although the “railway as the backbone” strategy has successfully enhanced the mobility of residents and discouraged car use in Hong Kong for decades (Loo, 2003), the city’s current transport system is in need of a more comprehensive review. Indeed, there are some emerging challenges in our metro system (MTR) and bus services in particular on the social dimension. For MTR, although trains operate on a “dedicated corridor”, overcrowding issues

during peak hours at multiple interchanges always occur. For bus services, road congestion along major trunk roads and tunnels are also noticeable. This has created significant time delays and transport stress during the journeys. In relation, ferry transport has significant potentials to supplement these two major public transport modes. Moreover, ferry transport can help promote transport resilience, which is also an essential element in transport sustainability (Loo and Leung, 2017). When there are disruptive events in the railway and road network (such as signals disruption, serious traffic crashes and blockage of major roads), ferry transport can provide an alternative public transit for people to move around the city, in particular around the highly dense commercial and residential districts.

With ferry as a mass public transport mode, it can be re-positioned as an important transport mode in the **sustainable transport hierarchy**. Fundamentally, only prioritising railway development can no longer pave the way to sustainable transport. We need a new paradigm in transitioning the current “railway as the backbone” strategy to a more comprehensive multi-modal “sustainable transport hierarchy” (with walking being considered as a formal transport mode as well). As pinpointed by Loo (2020, pp.1), sustainable urban transport is “an urban transport system which minimises adverse environmental impact, ensures the long-term economic and financial feasibility, and promotes social equity”. This system should integrate different public transport modes in a multimodal system that targets towards the goal of sustainable transport. Overall, a high level of multimodality (such as between road and water transport) that promote seamless travel between activity locations and different transit locations is essential to pave to the sustainable transport pathway (Loo and Tsoi, 2018).

CHAPTER 2 GEOGRAPHICAL OVERVIEW OF FERRY TRANSPORT IN HONG KONG

2.1 Geographical context

Geographically, Hong Kong is located at the mouth of the extensive Pearl River system in South China. The Victoria Harbour is a valuable asset of the city, whose central business district (CBD), major activity nodes and residential areas are located along the Victoria harbourfront. Moreover, Hong Kong has 263,263 outlying islands with a coastline of over 1,178 kilometres.

The population living on outlying islands has surged in recent years, growing by 11.3% in five-year time and reaching 172,000 in 2016 (CSD, 2016). Together with the population living along the coastline of the Hong Kong island, Kowloon peninsula and the New Territories, the number of people who may use water transport as their main mode of transport is substantial. The mobility needs of these Hong Kong people living along waterfront are huge and growing in the next few decades. Ferry services will have the potential to be their main or supplementary travel mode. Against the recent trends of increasing environmental awareness, heavy road congestion and over-crowding in metro and different forms of road-based public transport, ferry transport has not yet fulfilled its potential promise as an attractive and sustainable travel mode in Hong Kong.

Moreover, the above estimations already excluded the large number of mainland and overseas tourists coming to Hong Kong, who enjoy different ferry cruises and/or visits to outlying islands. In 2016, the total number of visitor arrivals to Hong Kong has reached 56.7 million (Tourism Commission, 2016). Ferry services passing Victoria Harbour and outlying islands can also be major attractions for domestic and international tourists.

2.2 Ferry Transport in Hong Kong

Ferry transport in Hong Kong can be mainly divided into (i) franchised and licensed services and (ii) 'kaito' services. Figure 1 illustrates the immediate coastline (800-meter buffer) and the two types of ferry services in Hong Kong as of 2019. The franchised and licensed ferry services serve the urban areas and outlying islands that are with dense population or major activity nodes (e.g. employment). There are **7 inner harbour routes** and **14¹ outlying island routes** as of 2020. The inner harbour routes are relatively short, and they mainly connect one side of the Victoria Harbour to another side (i.e. Hong Kong Island and Kowloon Peninsula). Outlying island routes mainly connect an outlying island to the urban areas, though there are

¹ On 1 January 2020, one outlying island ferry route (Aberdeen–Cheung Chau) ceased operation. As of March 2020, there are 14 outlying island ferry routes.

also two inter-island lines. For the kaito services, they are franchised by the government to support the franchised and licensed services. There are **15 kaito routes** serving the more remote outlying islands. These routes usually serve areas with a sparse population and/or as tourist attractions. Since the served population and passengers is much less than the franchised and licensed ferry routes, the services are divided into regular routes and non-regular routes (subject to demand).

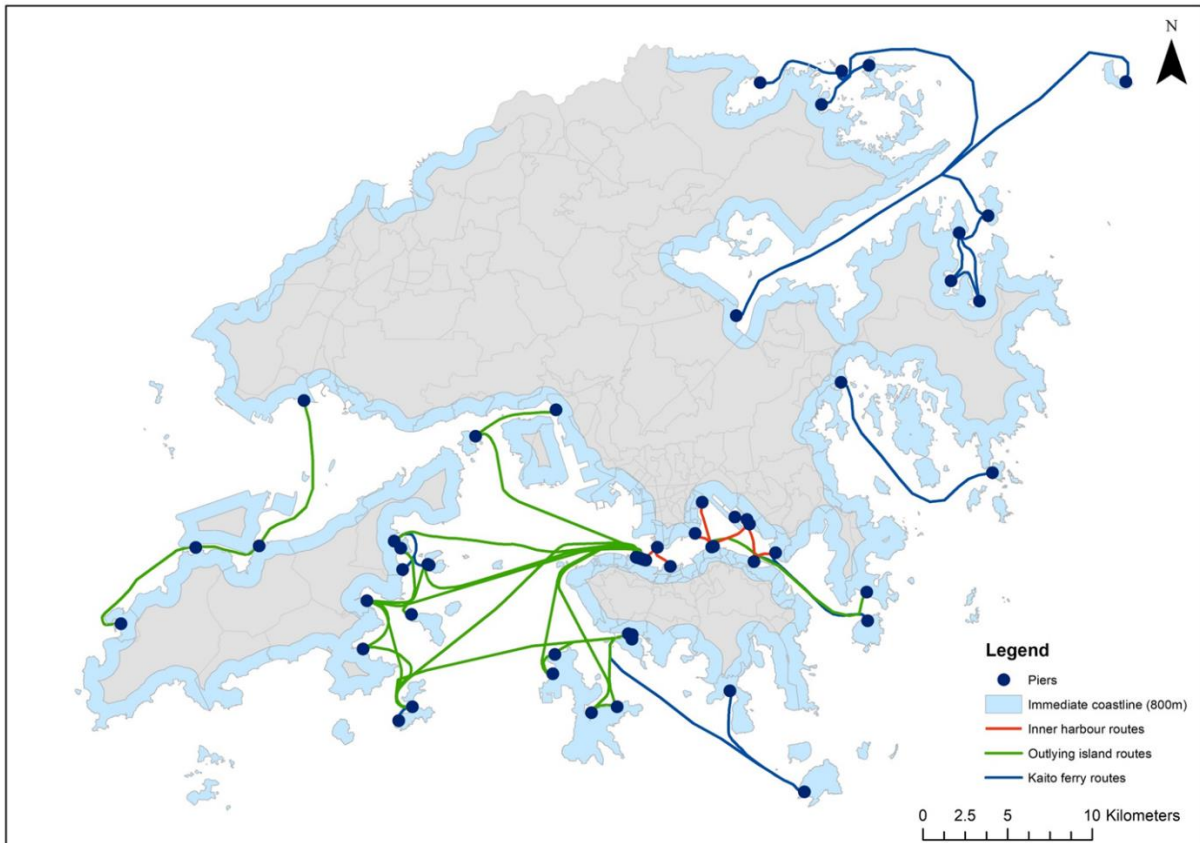


Figure 1. Geographical overview of ferry routes in Hong Kong

Note: The Aberdeen–Cheung Chau ferry service ceased the operation on 1 Jan 2020.

Nowadays, ferry services in Hong Kong are far from being a main transport mode. Only about **one percent (1%) of the mechanised trips by boarding** were made on ferries in 2011 (Transport Department, 2011). The popularity of ferry services has largely diminished since the 1950s. Many ferry services across the Victoria Harbour have stopped operation in face of the completion of mega-transport infrastructural projects (e.g. cross-harbour tunnels and bridges) and strong competition from cross-harbour transport modes such as bus transit and the mass transit railway (MTR). Even for the biggest outlying island of Lantau, with the development of the vehicular network (i.e. Tsing Ma Bridge and North Lantau Link) and mass transit rail (e.g. Tung Chung MTR Line and Airport Express) in 1997, ferry is no longer the only method to reach the settlements and tourist attractions (Loo, 2017). The above two

factors have mainly contributed to the decline of average daily patronage of ferry in the past five decades.

Focusing on the outlying island ferry routes, Table 3 shows the patronage of the population and daily patronage of these ferry routes in the last decade. Cheung Chau, Lamma Island and Peng Chau are islands that can **only** be accessed by ferries. Ferry patronage for these three routes have increased from 2006 to 2016, alongside a steady growth rate in the population (except Cheung Chau). Moreover, the faster growth rate of ferry patronage when compared to population growth suggests that increasing number of visitors (non-residents) are travelling to these islands for tourism or recreation purpose. In contrast, Mui Wo, Discovery Bay and Ma Wan are now settlements that can be accessed by ferry **and** other transport modes (i.e. residence coaches and regular bus service). These settlements have a drastic population increase but a decline in ferry patronage. In other words, residents living in these areas have a lower tendency to choose ferry as their main transport mode.

Table 3. Population and average daily patronage of ferry routes in major outlying islands

Major ferry routes (operators ^[1])		2006- 2007	2011- 2012	2015- 2016	Change (%)
a) Cheung Chau					
Population		24,312	22,740	20,956	-13.80
Ferry patronage	Cheung Chau–Central ^[2] (NWFF)	18,410	22,943	26,315	42.94
b) Lamma Island					
Population		5,158	6,013	6,014	16.60
Ferry patronage	Yung Shue Wan–Central ^[2] (HKKF)	7,123	8,601	9,111	27.91
	Sok Kwu Wan–Central ^[2] (HKKF)	877	1,016	1,257	43.33
c) Peng Chau					
Population		6,357	7,048	6,487	2.04
Ferry patronage	Peng Chau–Central ^[2] (HKKF)	4,900	5,618	6,680	36.33
d) Mui Wo					
Population		5,186	5,485	6,469	24.74
Ferry patronage	Mui Wo–Central ^[2] (NWFF)	6,400	5,531	5,865	-8.36
e) Discovery Bay					
Population		14,593	12,362	20,271	38.91
Ferry patronage	Discovery Bay–Central (DBT)	12,904	11,648	11,707	-9.28
f) Ma Wan					
Population		10,163	13,056	15,012	47.71
Ferry patronage	Ma Wan–Central (PIT)	3,829	3,376	3,039	-20.63

^[1] Ferry operators: New World First Ferry Services Limited (NWFF), Hong Kong and Kowloon Ferry Holdings Limited (HKKF), Tsui Wah Ferry Service (H.K.) Limited (TW), Discovery Bay Transportation Service Limited (DBT), Park Island Transport Company Limited (PIT).

^[2] The ferry service is subsidised by the Special Helping Measure (SHM).

Source: Research Office (2019), LegCo, (2009; 2017)

Moreover, many ferry routes connecting the urban areas with the major outlying islands (including the five routes a-d as stated in Table 3, and one inter-island route) have got into serious financial deficits resulting in the Special Helping Measures (SHM), a kind of ferry subsidies provided by the Hong Kong SAR Government since 2011. SHM was introduced

because ferry is the sole transport means for residents living on these outlying islands to reach the urban areas and the ferry services are not viable financially at reasonable fare level. Without subsidies, a **30% fare increase** is needed to breakeven the cost in the 2017-20 period (Legislative Council, 2016). Inclusive of the contingency provision, the subsidy cap requested has risen from a total of HK\$190 million (2014-2017) to HK\$410 million (2017-2020) (Legislative Council, 2016). Table 4 shows the SHM and their corresponding subsidy cap. However, such form of prolonged government subsidies to keep the ferry fare low may distort the public transport fare structure, especially in relation to the fares on other ferry services and other major transit modes. For the other eight ferry routes that are not covered by SHM, the Government has provided different ordinary helping measures (**OHM**) such as conducting pier maintenance, waives fuel duty, reimburses pier rentals and exempting vessel license fees for ferry services under the Elderly Concessionary Fares Scheme. In relation, the Government streamlines the pier subletting approval procedures to help generate non-fare box revenue for subsidising ferry operation so as to alleviate pressure for fare increase. Overall, there is not yet a strategic plan to support the continued development of the local ferry industry.

Table 4. Items of Special Helping Measures (SHM) (LegCo, 2016)

SHM items	Subsidy cap (HK\$)
Reimbursing the operators of the concerned ferry services for the vessel survey fee and private mooring charge	2,000,000
Reimbursing the pier electricity, water and cleansing charges	17,000,000
Reimbursing the balance of revenue foregone due to provision of elderly fare concessions after netting off the amount of pier rental reimbursement and vessel licence fee exemption under the established arrangement	35,000,000
Reimbursing the vessel maintenance cost	241,000,000
Reimbursing the vessel related depreciation costs	16,000,000
Reimbursing the revenue foregone due to provision of child fare concessions	21,000,000
Reimbursing the vessel insurance cost	9,000,000
Re-launching "Visiting Scheme to Outlying Islands"	3,000,000
Estimated cap of total subsidy amount	340,000,000
Inclusive of a 20% buffer provision	410,000,000

CHAPTER 3 RESEARCH METHODOLOGY

The research methodology of this study is developed following a multi-pronged approach that is structured in four major parts, including (i) population demand profiling, (ii) questionnaire surveys among ferry passengers, (iii) structured interviews with local ferry operators, and (iv) international case studies of ferry development. Figure 2 illustrates a flow chart of the methodology and summarises the objectives at each step.

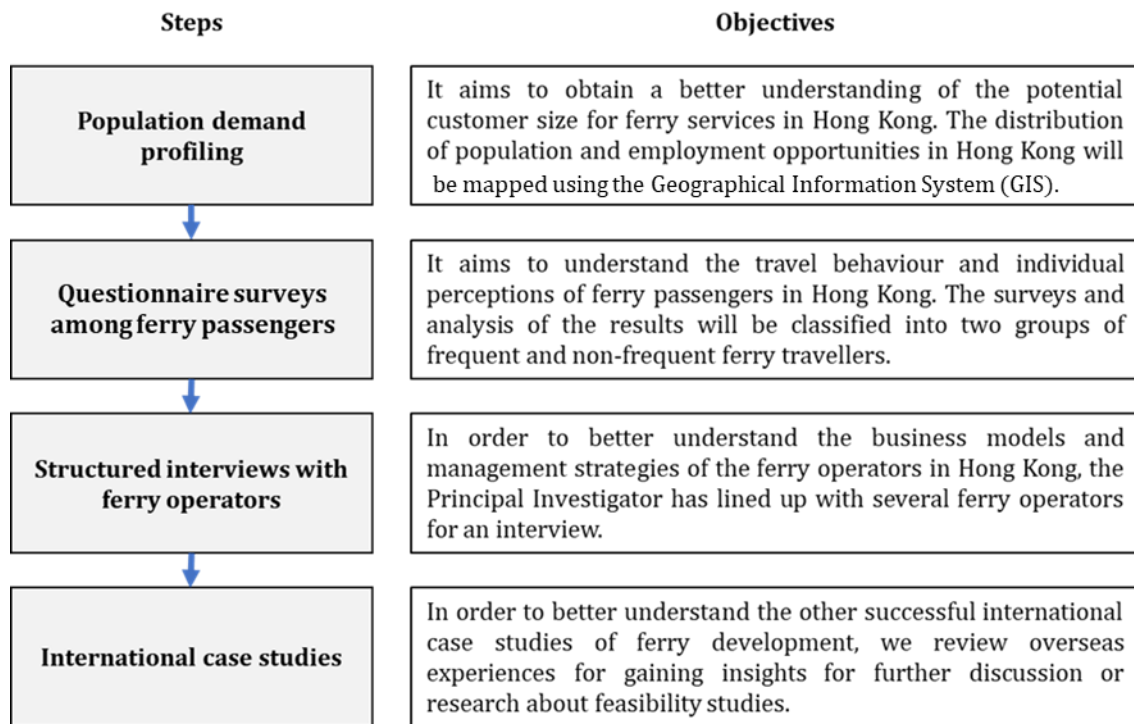


Figure 2. A flow chart of the research methodology

3.1 Population demand profiling

At this stage, we conducted a population demand profiling to obtain a better understanding of the potential customer size for ferry services in Hong Kong. In the first place, the spatial distribution of population and employment opportunities in Hong Kong is mapped using Geographical Information Systems (GIS). The spatial-temporal variations of population change in the coastal areas and on the outlying islands in the last decade (2006–2016) needs to be understood (Loo and Chow, 2008). This allows us to identify coastal areas with the fastest population growth rates, and hence provides valuable background information for a ferry policy. Essentially, we can identify the potential target population who may use ferry as their main mode of transport. In this study, the most basic and generic buffer distance of 800 meters is used as the ‘walkable distance’. Although the most common buffer distance used as

the “walkable distance” for rail-based transit-oriented development (TOD) is typically 500 meters (Loo, Cheng and Nichols, 2017; Loo, Chen and Chan, 2010), this study applies the 800-meter buffer as ferry piers are usually more constrained in specific waterfront locations. Then, further conditions are set to ensure that results of the population demand profiling are realistic. These additional conditions will be set after reviewing the practical considerations of the areas’ walkability, whether current or previous ferry piers exist, the feasibility of new ferry piers, local residents’ typical trip destinations (notably workplace for the working population) and major transport interchange facilities near ferry piers. In order to do so, we have gathered and analysed much more spatial data beyond the tertiary planning units (TPUs) and road network (e.g. about ferry piers).

3.2 Questionnaire surveys among ferry passengers

In order to understand the travel behaviour and perceptions of ferry passengers in Hong Kong, questionnaire surveys were distributed at piers of major ferry routes in this study. The detailed design of the survey and the procedures of conducting the questionnaire surveys are discussed below.

3.2.1 Design of the survey

To address objective 1 (to understand the current and potential demand of ferry services in Hong Kong) and objective 2 (to analyse the existing ferry services), the questions in the survey cover areas of (i) ferry travel behaviour, (ii) evaluation of existing ferry services and (iii) perceptions of potential ferry development in the future. The questionnaire is attached in Appendix 1 (available in both Chinese and English). The design of the survey takes careful consideration of both frequent and non-frequent ferry users, because the two groups may not have the same travel purposes and, hence, clear differences in their travel routines, knowledge and expectations for the ferry services. **Frequent ferry users** are defined as those who travel by ferry at least once a week.

a) Ferry travel behaviour (for frequent ferry passengers)

This section aims to collect information about the actual travel behaviour of frequent ferry passengers. First, each respondent indicates the ferry route(s) that he or she frequently uses (at least once a week). Then, based on the most recently travelled route, he/she provides further travel information regarding that particular trip, as shown below:

- **Frequency** of taking that ferry route

- **Major trip purpose of travelling by that ferry route:** The attributes include home, commuting, school, shopping or dining, recreation, weekend excursion and others).
- **Spatio-temporal information of the whole journey** (Figure 3): This includes boarding and alighting time from the ferry, and location and time of the origin and the destination of the whole trip.

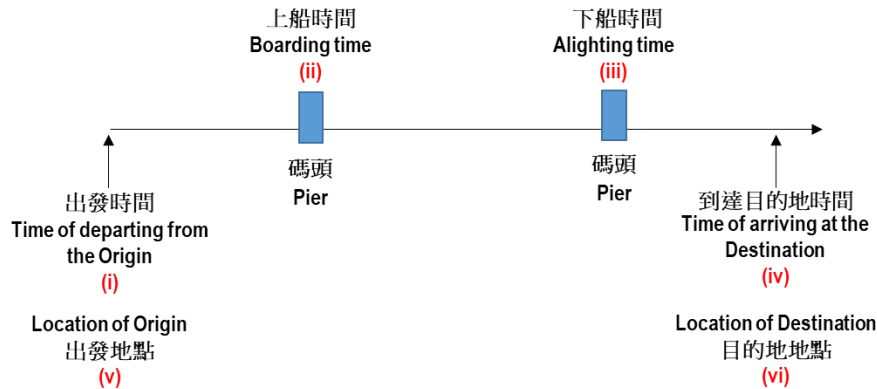


Figure 3. An illustration of spatio-temporal information for the whole journey

- **Connecting transport mode(s)** to and from the ferry pier (including walking, cycling and other mechanised transport modes)
- **Walkability ratings (i.e. convenience, safety, comfort and overall rating)** from the origin/public transit locations to the pier (Likert scale of 1-7)
- **Walkability ratings (i.e. convenience, safety, comfort and overall rating)** from the pier to the destination/public transit locations (Likert scale of 1-7)

b) Views about existing ferry services (for frequent passengers)

This section captures the frequent ferry passengers' level of satisfaction and perceptions about existing ferry services.

- **Satisfaction on the ferry services on a specified ferry route:** The attributes include fare, punctuality, frequency, safety, journey time, comfort and overall satisfaction.
- **Priority areas for improvement of the service on that ferry route:** The attributes include fare, frequency, reliability, safety, journey time, number of seats, cleanliness, comfort, provision of ancillary facilities, timetable information, facilities for the disabled, manner of frontline staff and others.
- **Preferred alternative public transport mode(s) if not taking a ferry:** They are MTR, bus, light rail, minibus, tram, taxis and others.
- **Reasons for choosing ferry as their major public transport modes:** The attributes include lower fare, more reliable service, shorter journey time, safer, better

connectivity to public transport, higher walkability around the piers, more comfortable, avoiding potential congestion, like being near the sea, being able to enjoy beautiful sea views and others.

- **Factors of making ferry travel more satisfactory (other than fare reduction):** The attributes include enhanced frequency, improving pier infrastructure, provision of toilets, provision of complementary Wi-Fi service, larger seating areas, more seats in the waiting areas, higher connectivity to other public transport modes, improved walking experience near the pier, increase activities (e.g. work and shopping) around the pier, and others.

c) Expectations for new ferry services (for non-frequent passengers)

As non-frequent passengers do not take ferry on a regular basis, we ask them to indicate the potential ferry services that they are interested in, so that their expectations can be reflected.

- **Ferry route(s) that they would consider taking should they be available** (e.g. some potential pier locations – Tai Kok Tsui, Hung Hom, Kowloon City, Tuen Mun, Kwun Tong, North Point, Sai Wan Ho, Kai Tak, West Kowloon Cultural District)
- **Acceptable fare, maximum travel time, expected frequency and expected number of rides per week** for the suggested/interested ferry route(s)
- **Factors that can increase the willingness of travelling by ferry (other than fare reduction):** The attributes include enhanced frequency, improving pier infrastructure, provision of toilets, provision of complementary Wi-Fi service, larger seating areas, more seats in the waiting areas, higher connectivity to other public transport modes, improved walking experience near the pier, increase activities (e.g. work and shopping) around the pier, more serious road congestion, more overcrowded in other public transport modes, increasing fare of other transport modes, increasing island activities and others).

d) Perceptions towards potential ferry development

This section aims to collect opinions towards potential new ferry services, in particular the development of water taxi services and the re-commissioning of a suspended ferry service, that is, the Central–Hung Hom route.

- **Overall acceptance** towards the development of water taxi services (or non-regular kaito ferry services)
- **Potential loading and unloading locations for water taxis**
- **Acceptable fare** for a water taxi trip
- **The most desirable options for the re-commissioning the “Central–Hung Hom” ferry route:** Several choice games are presented to the respondents based on the attributes

of fare, frequency, travel time and operation hours. Each choice game consists of four options and the respondents indicate their most preferred option.

3.2.2 Procedures of conducting questionnaire surveys

Student RAs were delegated to ferry piers and on vessels to conduct questionnaire surveys upon the support from ferry operators. In order to obtain sufficient and representative samples, questionnaire surveys were conducted at eight piers from 25 March 2019 to 19 April 2019. They are the Tsim Sha Tsui Star Ferry Pier, Central Star Ferry Pier, Wan Chai Ferry Pier, Central Pier No.5 & 6, North Point Ferry Pier, North Point (East) Ferry Pier and Aberdeen Pier. Their locations are shown in Figure 4. The ferry routes covered include Tsim Sha Tsui–Central, Tsim Sha Tsui–Wan Chai, Central–Cheung Chau, Central–Mui Wo, North Point–Hung Hom, North Point–Kowloon City, North Point–Kwun Tong (via Kai Tak), Aberdeen–Cheung Chau (ceased the operation on 1 Jan 2020) and Aberdeen–Pak Kok Tsuen–Yung Shue Wan. The questionnaire survey did not collect personal identifier information and was anonymous. Participation was entirely voluntary. All information obtained was used for research purposes only and disaggregate/raw data remain strictly confidential. Ethical approval from University of Hong Kong was obtained before collecting survey data (No. EA1802077).

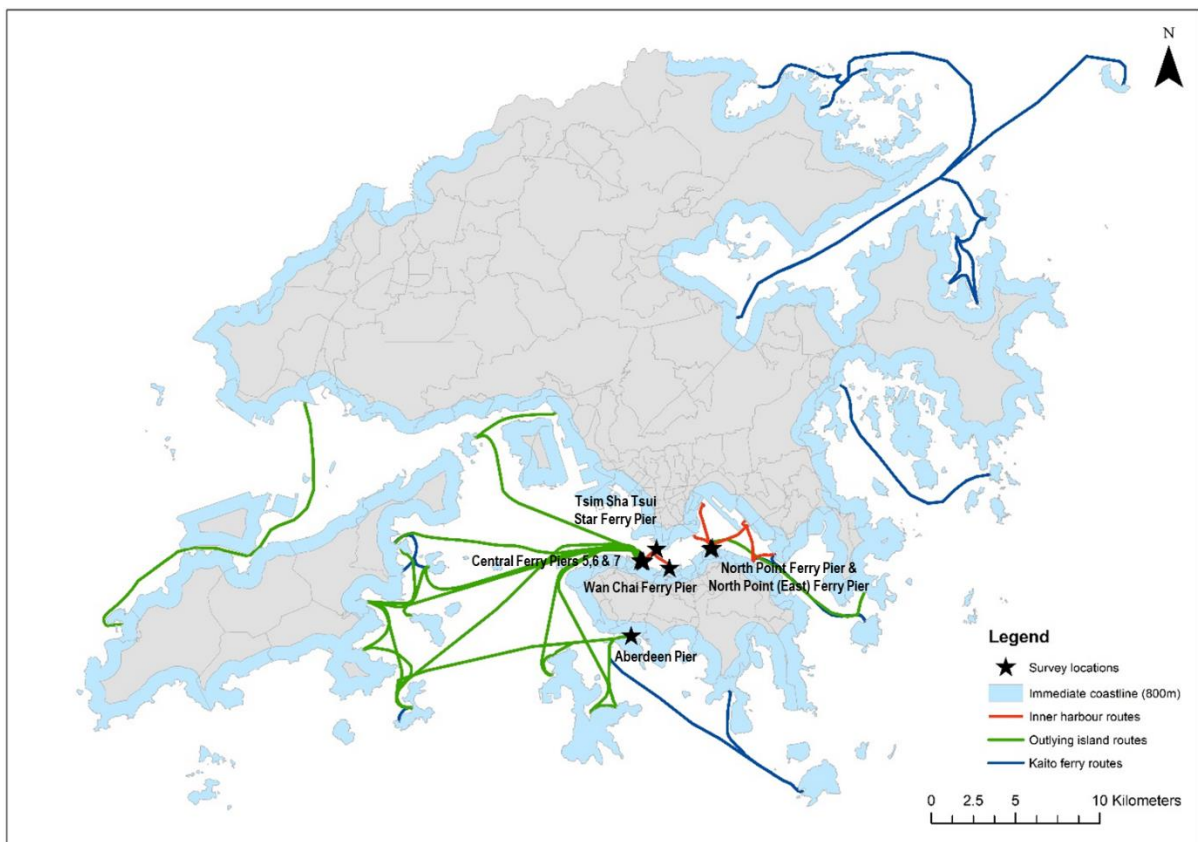


Figure 4. A map showing the survey locations in this study

Table 5 summaries the working plan for conducting the on-site questionnaire surveys. Our student RAs were wearing identifiable certification badges when conducting the surveys. A sample is shown in Figure 5. They clearly introduced their identity and brief details of the project before they started to collect data. Figures 6 and 7 show the on-site situations of conducting questionnaire surveys. Since our targeted samples are ferry passengers of local residents, our surveys were mainly conducted in Cantonese.

Table 5. Work schedule of the questionnaire survey among ferry passengers

Ferry operator	Ferry pier	Date
Star Ferry	Tsim Sha Tsui Star Ferry Pier	25 March 2019 – 2 April 2019
	Central Star Ferry Pier (No.7)	25 March 2019 – 2 April 2019
	Wan Chai Ferry Pier	25 March 2019 – 2 April 2019
New World First Ferry	Central Pier No.5 & 6	3 April 2019 – 12 April 2019
	North Point Ferry Pier	15 April 2019
Fortune Ferry Pier	North Point (East) Ferry Pier	8 April 2019 – 12 April 2019
Tsui Wah Ferry Pier	Aberdeen Pier	15 April 2019 – 19 April 2019



Figure 5. A sample of the identity badge



Figure 6. A student RA conducting questionnaire survey at North Point (East) Ferry Pier



Figure 7. A student RA conducting questionnaire survey at Central Pier No. 6

3.3 Structured interviews with ferry operators

In order to better understand the business models and management strategies of the ferry operators in Hong Kong, the Principal Investigator lined up with several ferry operators for interviews between August 2018 and February 2019. In total, six interviews with five ferry operators and the Legislative Councillor (Transport Functional Constituency) were conducted. The five ferry operators are as follows (in alphabetical order):

- Fortune Ferry Co. Ltd
- Hong Kong Ferry (Holdings) Company Limited
- New World First Ferry Services Limited
- The Star Ferry Company, Limited
- Tsui Wah Ferry Service (H.K.) Limited

As of 2016, the five passenger ferry operators captured around 75 percent of the total market share with around 99,000 passengers a day. Hong Kong Ferry (Holdings) Company Limited now only operates vehicular ferry service between Kwun Tong and North Point. Table 6 summarises the passenger-carrying routes operated by these ferry operators.

Table 6. Regular routes operated by the four ferry operators

Operators	Route (regular service)	Website
Fortune Ferry Co. Ltd	<ul style="list-style-type: none"> • Tuen Mun–Tai O • North Point–Kwun Tong (via Kai Tak) 	https://www.fortuneferry.com.hk/
New World First Ferry Services Limited	<ul style="list-style-type: none"> • Central–Cheung Chau • Central–Mui Wo • North Point–Kowloon City • North Point–Hung Hom 	http://www.nwff.com.hk
The Star Ferry Company, Limited	<ul style="list-style-type: none"> • Tsim Sha Tsui–Central • Tsim Sha Tsui–Wan Chai 	http://www.starferry.com.hk
Tsui Wah Ferry Service (H.K.) Limited	<ul style="list-style-type: none"> • Aberdeen–Pak Kok Tsuen–Yung Shue Wan • Aberdeen/Stanley–Po Toi Island 	http://tsuiwahferry.com/en/

To address objective 2 (to analyse the associated business models), there are five major questions in the structured interviews. They are:

- Descriptions of the ferry business model and evaluation on the greatest strengths and weaknesses
- The greatest challenges to operate ferry services as a business
- Strategies adopted (or to be adopted) to address those challenges
- The most effective form of support (other than direct fare subsidies) that the government should give to ensure long-term sustainability of ferry services in Hong Kong
- Suggestions for potential ferry routes that the company may operate

In relation, the number of complaints about ferry services received by the Transport Complaints Unit of the Transport Advisory Committee over time is examined.

3.4 International benchmarking

Next, we reviewed overseas experiences to gain insights on factors about viable ferry operations. Essentially, we focus on the following aspects:

- The ways and strategies of ferry operators attracting ferry patronage;
- The role of the government and its relationships with the ferry operators; and
- The role of ferry services in contributing to comprehensive sustainability (Loo, 2018; Loo and Chow, 2006)

Secondary sources of data included the ferry operators' annual reports and publicly available information, as well as the official government policies and documents (both local and international).

Based on the above, existing problems and perceived prospect of expanding ferry services in Hong Kong are critically assessed. The role of ferry services, as mentioned in different Policy Addresses and other government documents, is extracted to inform us about the current situation in Hong Kong. We believe that understanding the current situation is an essential step before exploring the way forward and making specific recommendations. At the final stage, this project hopes to identify some potential models for Hong Kong's policymakers and the general public to discuss and further explore. Recommendations on the way forward are made.

CHAPTER 4 RESULTS

4.1 Population demand profiling

Changes of population and employment along the coastline (800-meter buffer) over the last decade are mapped in Figures 8 and 9 respectively. The locations of the existing ferry piers are also indicated. Focusing on population, the most significant increase was observed in Kowloon with ongoing redevelopment and new residential projects, namely West Kowloon and Kai Tak. Science Park and the southern Sai Kung region are also having more than 60 percent increase in population density. Tseung Kwan O and Kwun Tong have witnessed moderate increase. On the contrary, most of the areas along the Northern coastline on Hong Kong Island are having lower population density, except for the Sai Wan Ho area. For employment density, the coastal area of East Kowloon (i.e. Kai Tak, Kwun Tong and Tseung Kwan O) is having increasing employment density in the last decade. Employment density along the western coast of Hong Kong Island (i.e. Pokfulam and Cyberport) has also increased significantly. In the New Territories, Sai Kung and Tuen Mun have undergone a significant growth of employment density. Strong growth was also found in some coastal areas of Lantau Island (i.e. Tung Chung, Hong Kong International Airport, Disneyland and Pui O).

Table 7 summarises the estimated population and employment surrounding the piers of the seven inner harbour routes and fourteen outlying island routes. A simple correlation analysis suggests that the estimated **employment** surrounding the piers is positively associated with ferry patronage ($=0.68$, $p<0.01$). Population is not significantly associated with ferry patronage. This can be because areas of denser population (i.e. large-scale residential areas) are usually well-connected by accessible public transport (i.e. rail transit). Also, these areas are not the most highly accessible locations, and they have no ferry route connecting directly with the CBD or downtowns.

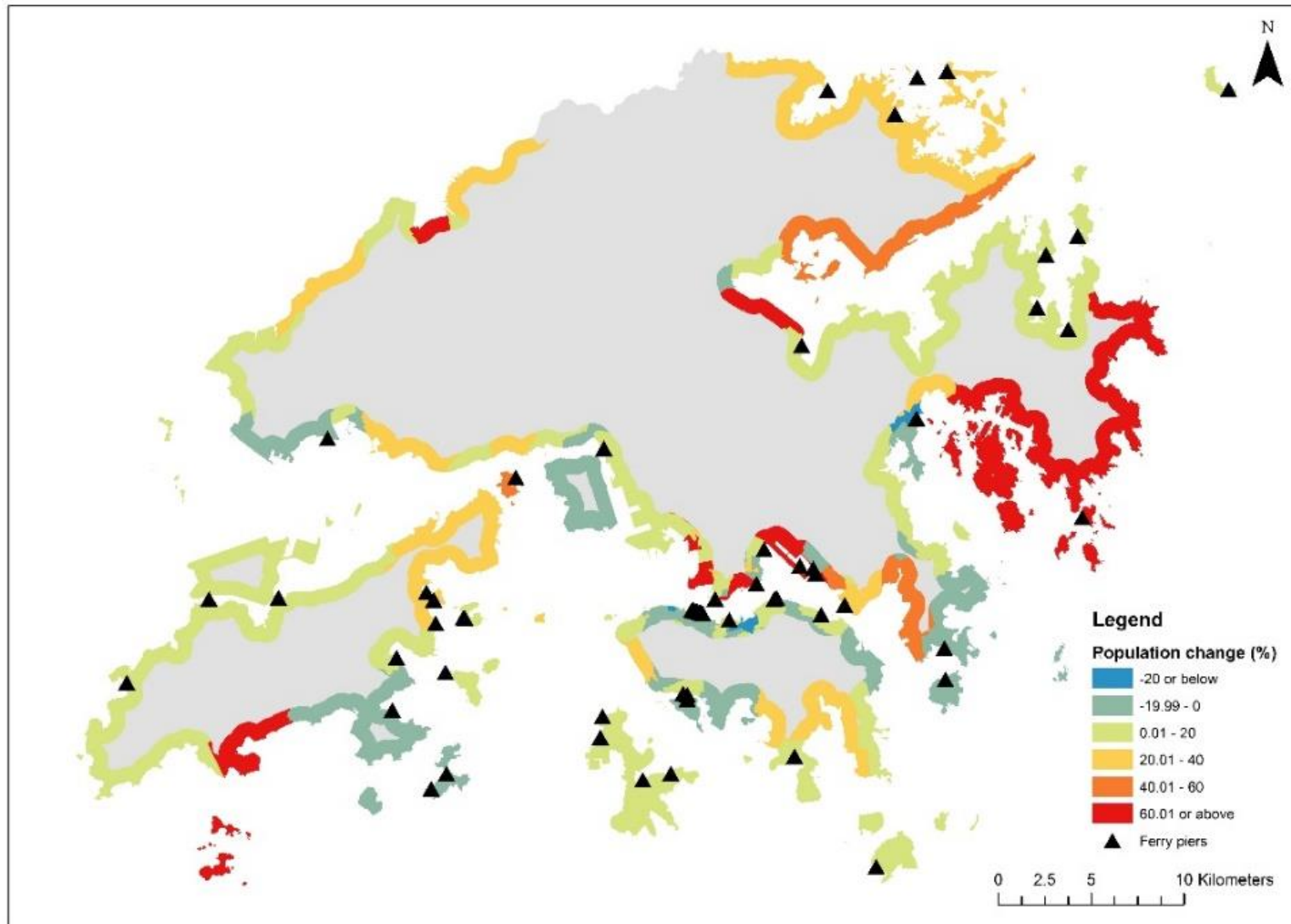


Figure 8. Change of population density along the coastline between 2006 and 2016

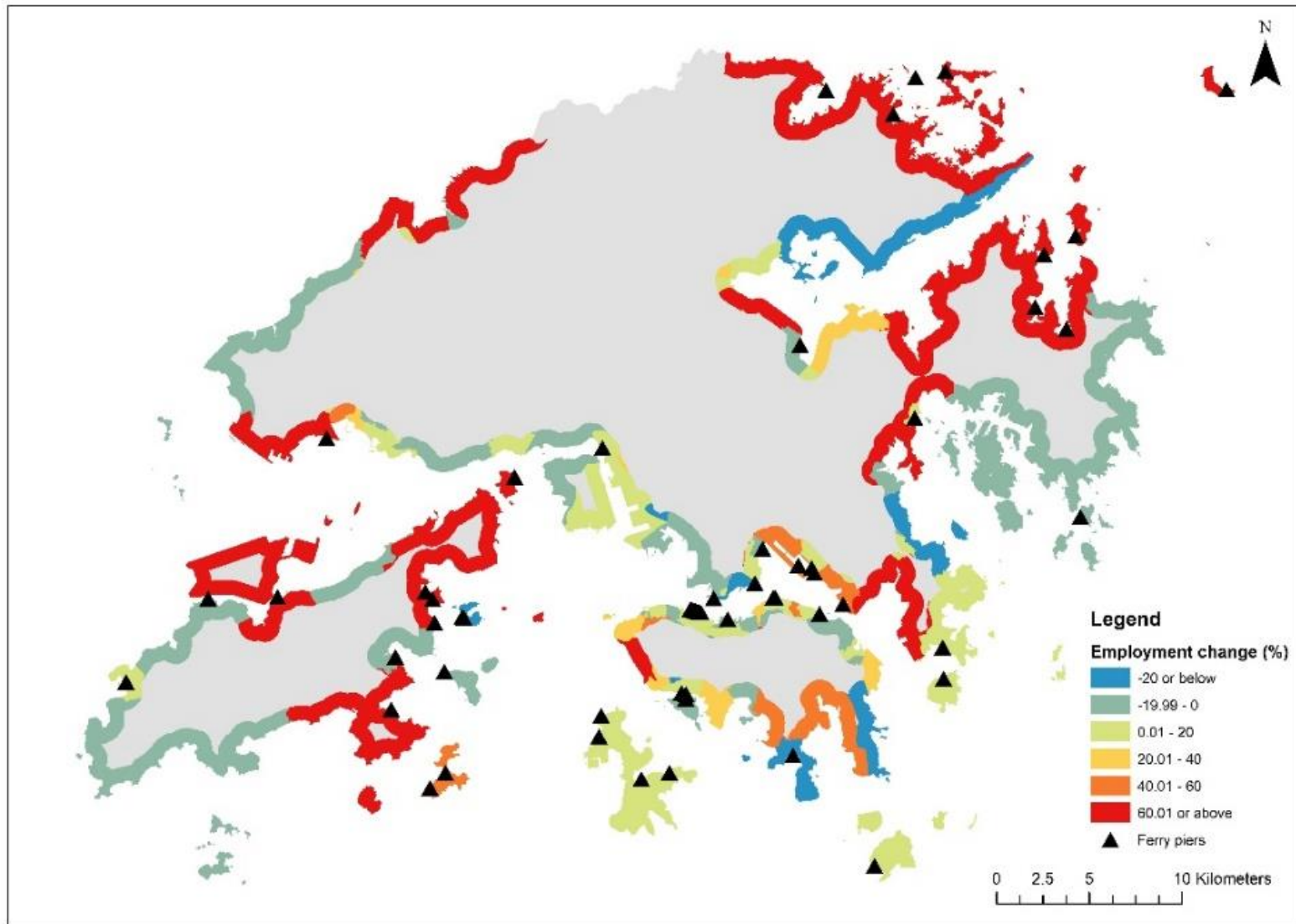


Figure 9. Change of employment density along the coastline between 2006 and 2016

Table 7. Estimated population and employment opportunities of 15 ferry routes

Ferry routes		Patronage	Pier at A (800-meter buffer)		Pier at B (800-meter buffer)		Total	
A	B		Est. Pop ^[1]	Est. Emp ^[2]	Est. Pop ^[1]	Est. Emp ^[2]	Est. Pop ^[1]	Est. Emp ^[2]
Inner harbour								
Central	Tsim Sha Tsui	39,700	5,640	47,632	17,749	60,661	23,389	108,293
Wanchai	Tsim Sha Tsui	15,600	31,067	78,563	17,749	60,661	48,816	139,224
North Point	Hung Hom	3,400	164,089	56,883	63,688	17,472	227,777	74,355
North Point	Kowloon City	2,600	164,089	56,883	100,111	37,568	264,201	94,452
North Point	Kwun Tong	1,400	164,089	56,883	50,841	11,154	214,931	68,037
Sai Wan Ho	Kwun Tong	900	70,827	18,565	60,774	12,848	131,601	31,412
Sai Wan Ho	Sam Ka Tsuen	500	70,827	18,565	42,811	6,513	113,638	25,077
Outlying island								
Central	Cheung Chau	26,315	8,138	66,712	8,474	1,144	29,094	160,801
	Inter-islands	1,059	-	-	-	-	13,108	34,612
Central	Mui Wo	5,865	6,765	56,205	282	6	13,234	159,703
Central	Peng Chau	6,860	6,765	56,205	4,233	139	13,252	159,795
Central	Yung Shue Wan	9,111	10,000	76,686	344	6	15,448	159,684
Central	Sok Kwu Wan	1,257	10,000	76,686	431	7	10,566	159,691
Hei Ling Chau	Peng Chau	539	120	1	4,233	139	7,422	158
Aberdeen	Yung Shue Wan	845	67,889	8,634	344	6	73,337	8,672
Aberdeen	Sok Kwu Wan	642	67,889	8,634	431	7	68,455	8,679
Tuen Mun	Tai O	1,102	7,755	98	213	6	14,591	3,182
Discovery Bay	Central	11,707	1,172	203	12,970	83,852	33,241	160,103
Discovery Bay	Mui Wo	264	1,172	203	282	6	26,740	493
Ma Wan	Central	3,039	9,245	727	16,467	89,372	31,479	160,383
Ma Wan	Tsuen Wan	302	9,245	727	26,351	2,808	41,363	22,743

Note: [1] Est. Pop: Estimated population; [2] Est. Emp: Estimated employment. The total estimated population and estimated employment of outlying islands are calculated by considering the whole island / district, instead of the 800-meter buffer.

4.2 Questionnaire surveys among ferry passengers

A total of 675 valid responses were collected for the questionnaire survey. Table 8 summarises the socio-economic characteristics of survey respondents. Figure 10 shows the distribution of frequency of using ferry services among the survey respondents. Overall, we have obtained a fairly balanced sample of frequent and non-frequent ferry passengers (at least of once a week). More than 40 percent of the respondents seldom travel by ferry (i.e. less than once a month).

Table 8. Sample composition

	Frequent passengers		Non-frequent passengers	
	Number	Percentage	Number	Percentage
Gender				
Male	127	18.81	176	26.07
Female	142	21.04	214	31.70
Age				
19 or below	23	3.41	26	3.85
20-29	49	7.26	93	13.78
30-39	59	8.74	113	16.74
40-49	61	9.04	73	10.81
50-59	48	7.11	47	6.96
60 or above	33	4.89	42	6.22
Economic status				
Full-time employed	162	24.00	198	29.33
Part-time employed	21	3.11	45	6.67
Students	38	5.63	67	9.93
Housewives	21	3.11	33	4.89
Unemployed	1	0.15	7	1.04
Retired	30	4.44	42	6.22

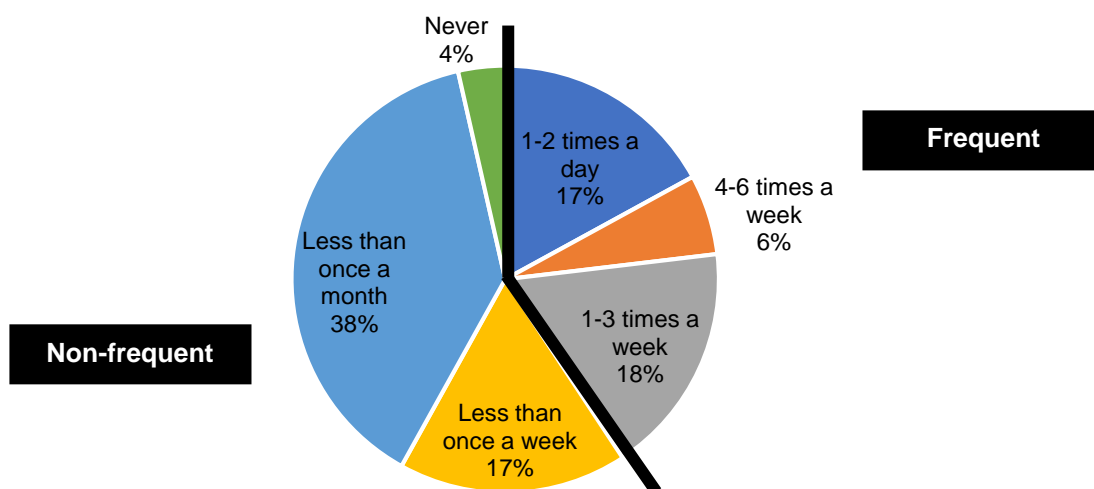
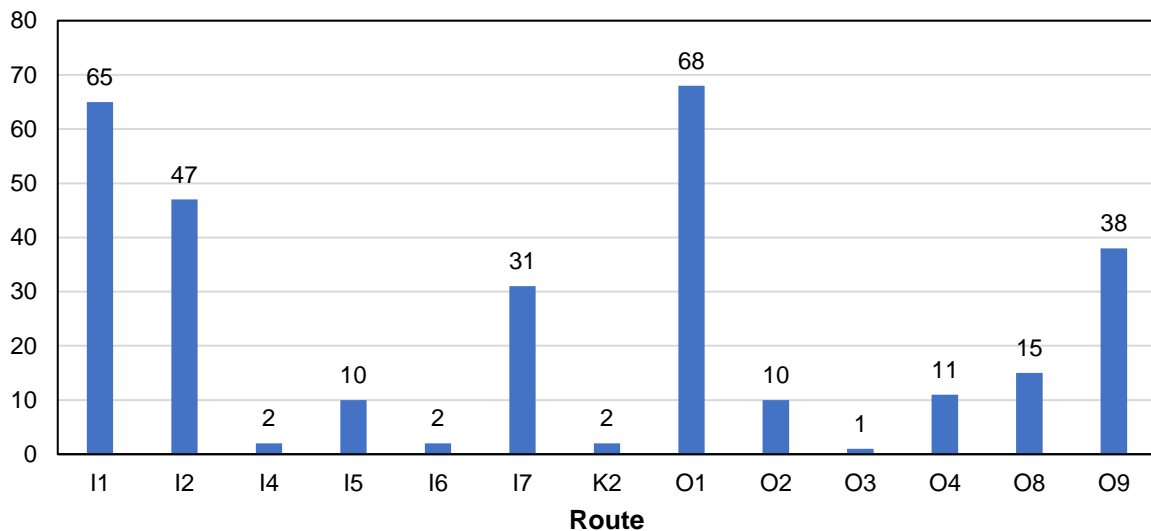


Figure 10. Travel frequency by ferry

4.2.1 Travel behaviour of frequent ferry passengers

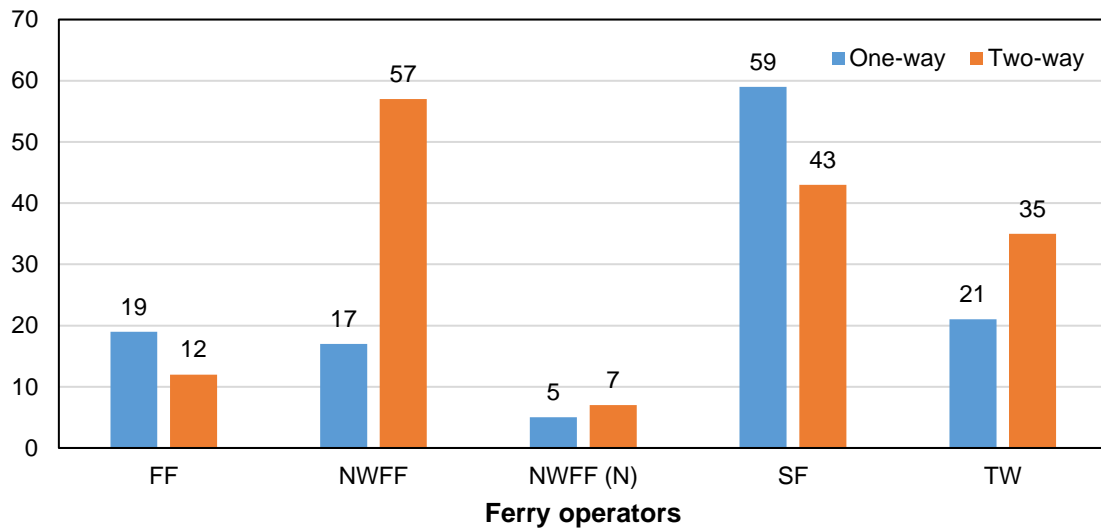
Overall, around 90 percent of the frequent passengers travelled on a single ferry route at least once a week, whereas the remaining 10 percent frequently travelled on more than one ferry route. Figure 11 summarises the number of respondents travelling on different ferry routes at least once a week. In our samples, most of the respondents travelled frequently on the two Star Ferry routes of Tsim Sha Tsui–Central (65) & Tsim Sha Tsui–Wan Chai (47), and the Central–Cheung Chau route operated by New World First Ferry route (68). These three routes are also having the highest ferry patronage in Hong Kong. We are also able to capture a reasonable sample size using the North Point–Kwun Tong route (31) operated by Fortune Ferry and the Aberdeen–Pak Kok Tsuen–Yung Shue Wan (38) operated by Tsui Wah Ferry. The sample composition meets our objective of capturing passengers travelling on different ferry routes to better understand the discrepancies among them.



I1	Tsim Sha Tsui-Central
I2	Tsim Sha Tsui-Wanchai
I4	Sai Wan Ho-Kwun Tong
I5	North Point-Hung Hom
I6	North Point-Kowloon City
I7	North Point-Kwun Tong (via Kai Tak)
O1	Central-Cheung Chau
O2	Central-Mui Wo
O3	Central-Peng Chau
O4	Central-Yung Shue Wan
O8	Aberdeen-Cheung Chau
O9	Aberdeen-Pak Kok Tsuen-Yung Shue Wan
K2	Aberdeen-Ap Lei Chau

Figure 11. Number of respondents travelling on different ferry routes at least once a week

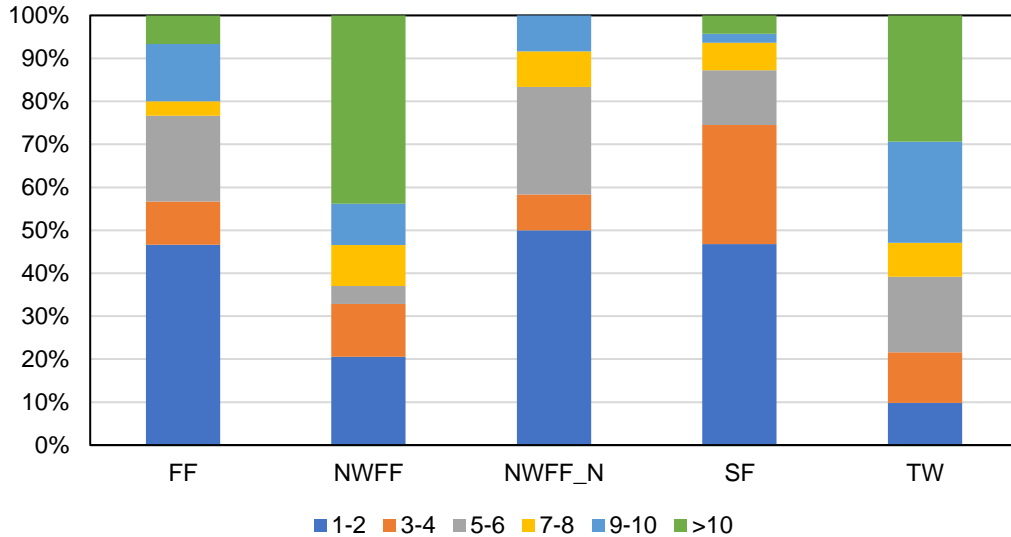
The respondents were then asked to record their travel information and evaluate the ferry service of their last ferry trips. We have obtained quite a large spread of samples from different ferry operators (Figure 12). Except for the New World First Ferry outlying island routes (NWFF) and Tsui Wah Ferry, a significant proportion of frequent passengers were taking one-way instead of two-way trips.



Note: Fortune Ferry (FF), New World First Ferry: outlying island routes (NWFF), New World First Ferry: urban routes (NWFF(N)); Star Ferry (SF) and Tsui Wah Ferry (TW)

Figure 12. The last ferry route that the respondents were on-board (by ferry operators)

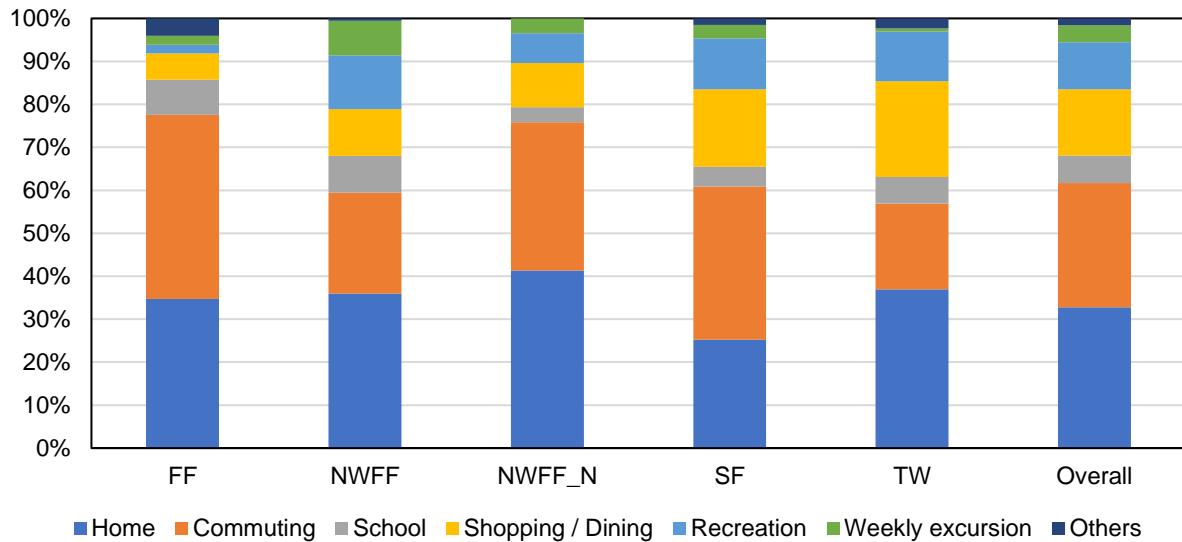
Figure 13 shows the travel frequency per week. Over 40 percent of the respondents travelling on the inner harbour routes, such as North Point–Kwun Tong (FF), Tsim Sha Tsui–Central (SF), Tsim Sha Tsui–Wan Chai (SF), were only travelling for one to two times a week, implying that ferry travel is not an everyday routine in a week. For the outlying island ferry routes, such as Central–Cheung Chau (NWFF), Central–Mui Wo (NWFF) and Aberdeen–Yung Shue Wan (TW), more than 70 percent of the respondents were travelling on a very regular basis (at least five to six times a week), as these routes are usually the only means to travel between islands (e.g. Lamma Island and Cheung Chau).



Note: Fortune Ferry (FF), New World First Ferry: outlying island routes (NWFF), New World First Ferry: urban routes (NWFF_N); Star Ferry (SF) and Tsui Wah Ferry (TW)

Figure 13. Frequency of travel per week (by ferry operators)

Figure 14 shows the overall trip purpose of ferry travel. Around 35 percent of the trips were for mandatory activities (i.e. commuting and school), and 30 percent were for discretionary activities (i.e. shopping, dining, recreation and weekend excursion). If we break down the trip purpose by ferry operators, there are some observable differences. First, for some inner harbour routes, such as North Point–Kwun Tong (FF), North Point–Kowloon City (NWFF_N) and North Point–Hung Hom (NWFF_N), over 80 percent of the trips were for home and mandatory purpose, indicating that these ferry routes are mainly used for commuting purposes. In contrast, the other non-inner harbour routes were observed with a mixed of commuting, leisure and recreation purpose. Around 25 percent of the trips were made for shopping, dining and recreation purposes, which can possibly be explained by the proximity of piers to the shopping malls and promenade in those piers (i.e. IFC and Harbour City). Also, weekly excursion was the most popular for the NWFF island routes (i.e. Central–Cheung Chau and Central–Mui Wo).



Note: Fortune Ferry (FF), New World First Ferry: outlying island routes (NWFF), New World First Ferry: urban routes (NWFF(N)); Star Ferry (SF) and Tsui Wah Ferry (TW)

Figure 14. Trip purpose for ferry travel (by ferry operators)

According to the spatio-temporal information of their whole journeys that involved ferry travel, the major origin and departure locations of connecting from/to piers directly by walking were mapped out around several major piers (Figures 15-19), including Central, Tsim Sha Tsui, Wan Chai, North Point and Kwun Tong. Several highlights are summarised below:

- **Central ferry piers:** The Central downtown (near MTR station), International Financial Centres and Sheung Wan Station were the most popular locations.
- **Tsim Sha Tsui ferry pier:** Harbour City and a cluster of opportunities/locations along the promenade (i.e. Cultural Centre, K11, Avenue of Stars and East Tsim Sha Tsui) were most visited. Some also walked to the Tsim Sha Tsui core region (i.e. Nathan Road).
- **Wan Chai ferry pier:** Wan Chai station was the most popular activity location. Some were observed near the piers (i.e. HKCEC) and Causeway Bay.
- **North Point ferry pier:** Most people travelled to/from the activity locations near North Point Station (near King's Road).
- **Kwun Tong ferry pier:** Most people travelled to the traditional Kwun Tong core area (near MTR station and the Millennium City). Some were going to the industrial areas of Kwun Tong (currently undergoing redevelopment).

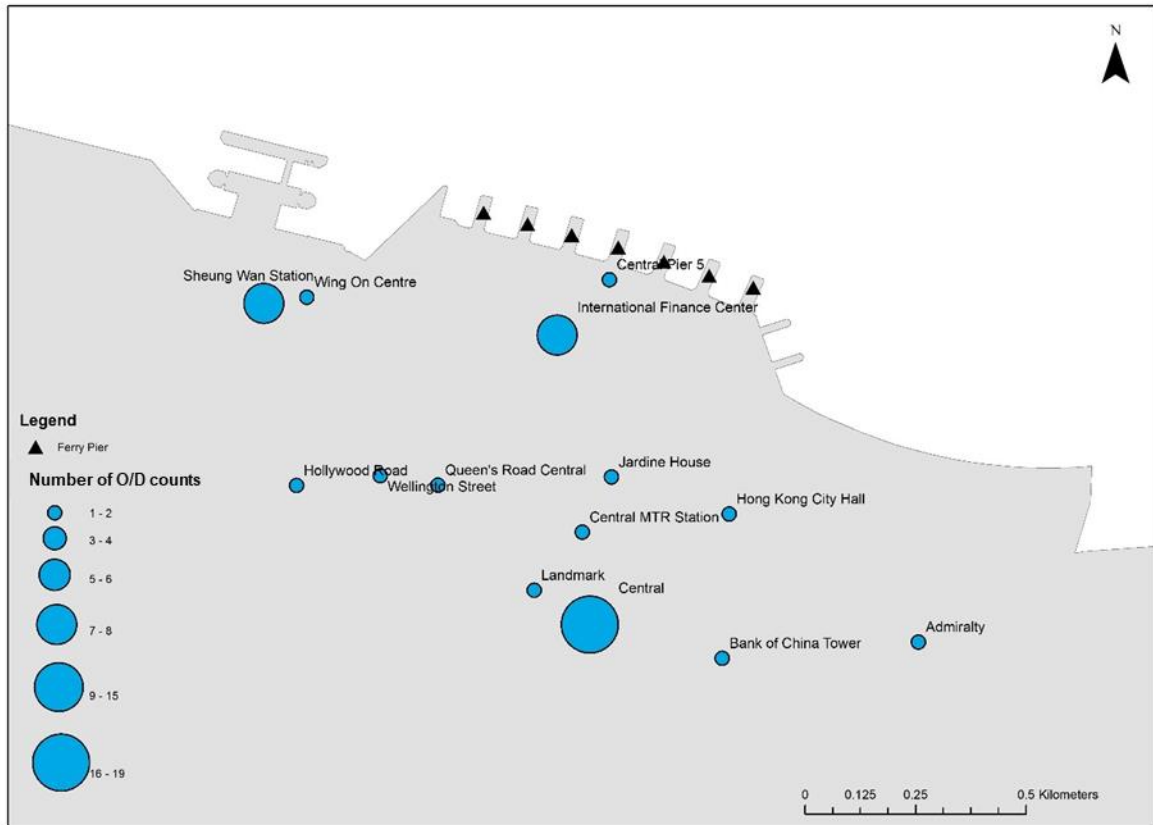


Figure 15. Major activity locations near Central Ferry Piers (including Pier No.5, 6 and 7), as reported by survey respondents

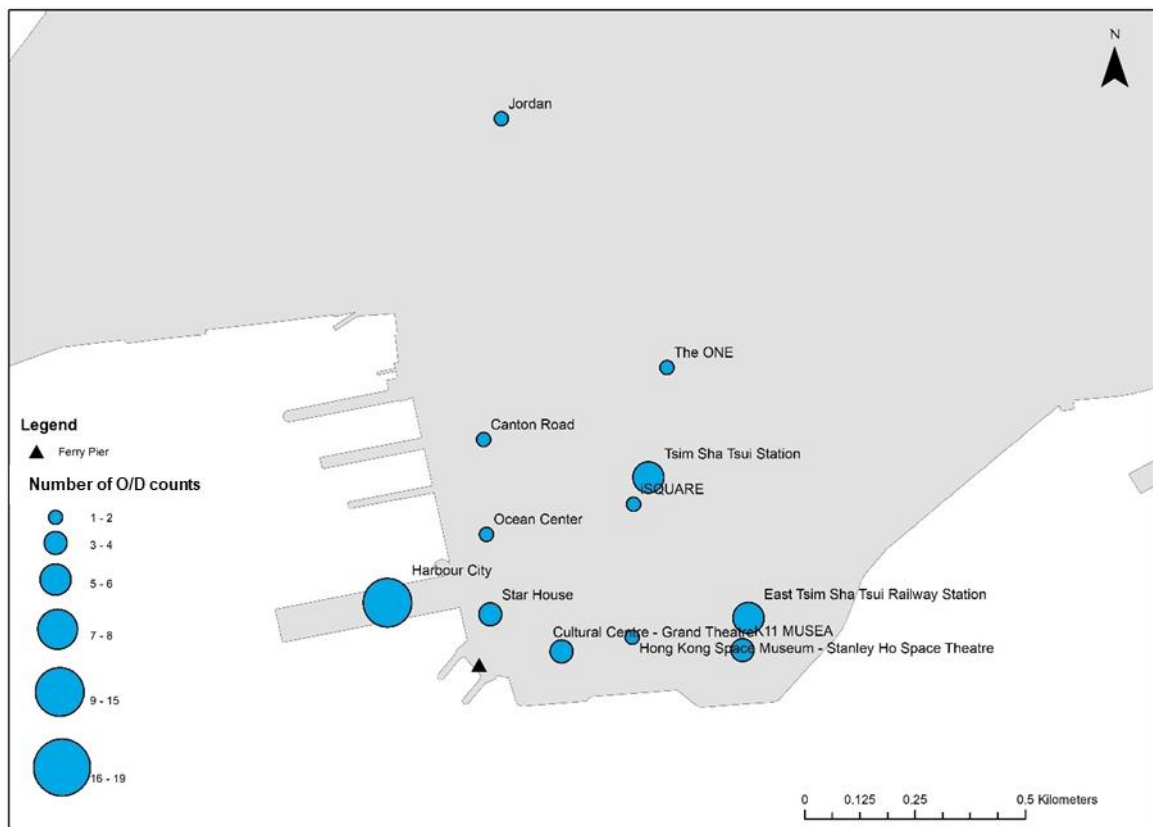


Figure 16. Major activity locations near Tsim Sha Tsui Star Ferry Pier, as reported by survey respondents



Figure 17. Major activity locations near Wan Chai Ferry Pier, as reported by survey respondents

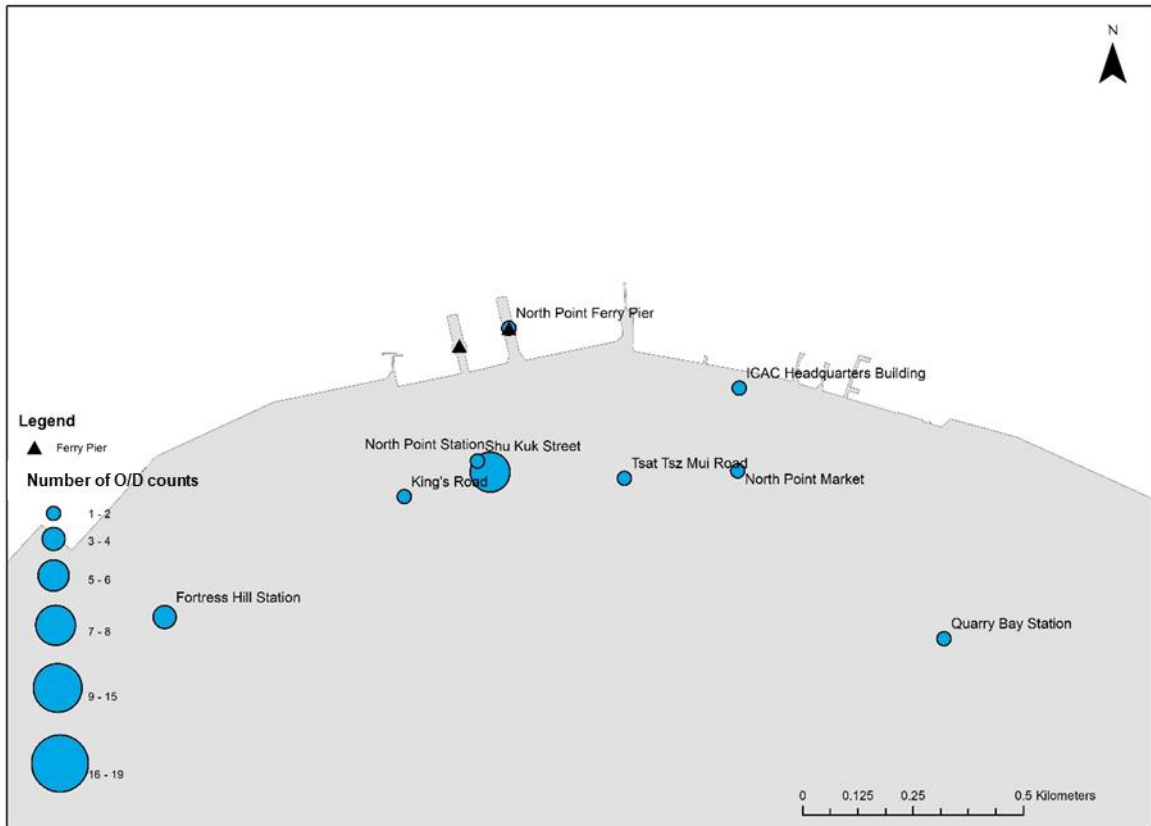


Figure 18. Major activity locations near North Point Ferry Pier, as reported by survey respondents



Figure 19. Major activity locations near Kwun Tong Ferry Pier, as reported by survey respondents

Figure 20 provides an overview of the respondents' ferry boarding time for their last ferry trips. There is a regular routine of frequent travellers during AM (7–10 am) and PM (4–7 pm) peaks. Based on the travel purpose reported, these trips were mainly for commuting and school purpose. In the morning hours, around 85 percent of the respondents travelled for mandatory activities. While in the afternoon (11 am–2pm), there was a mix of passenger in terms of their major trip purpose. A significant growth of travellers for discretionary activities were observed. Beyond the peak hours, over 30 percent of the respondents travelled for recreational, leisure and sport activities.

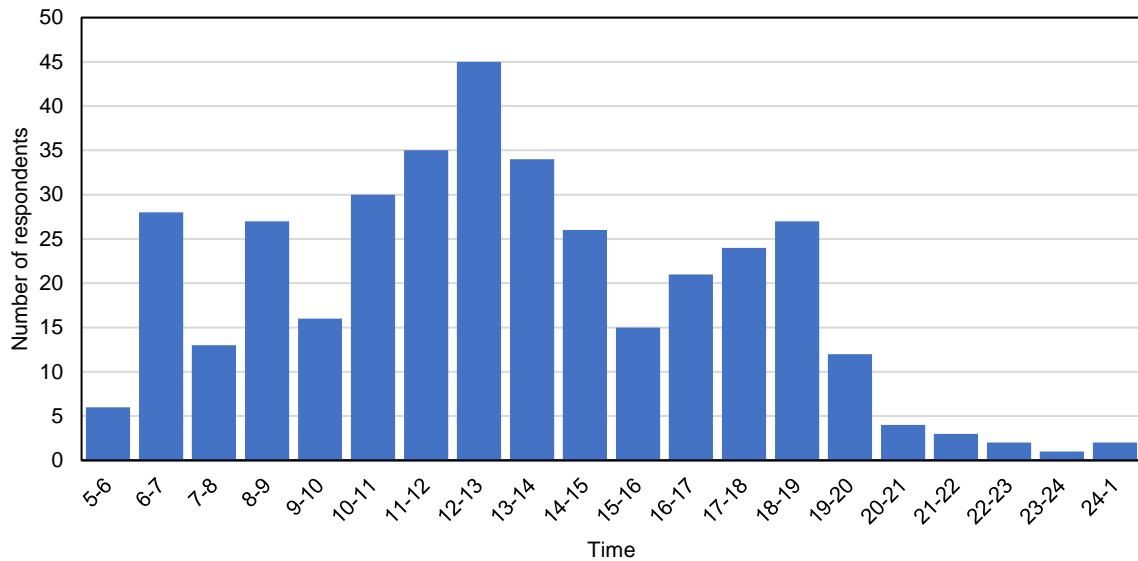
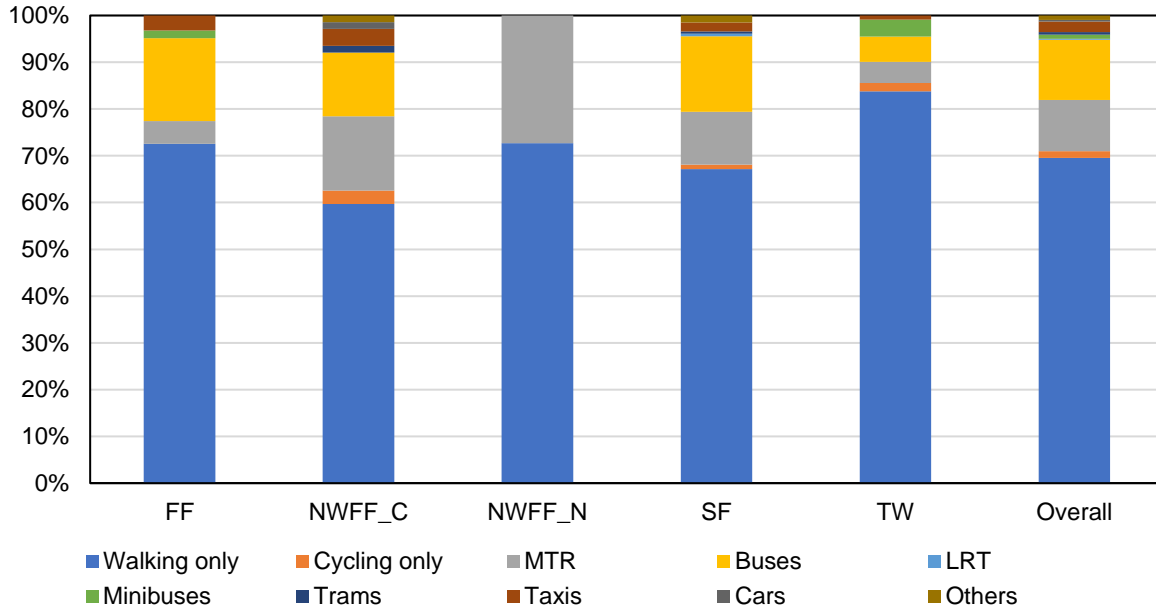


Figure 20. Time of the respondents getting on the ferry of the last trip

Figure 21 summarises the major connecting modes between the ferry pier and the activity locations. Overall, 70 percent of the connection trips were made by **walking only**, suggesting that people usually walked to their desired locations from/to the piers. The remaining 30 percent involved transfer from/to other transport modes, with the highest percentage in **buses** and followed by **MTR**. The highest percentage for modal transfer between ferry and other transport was NWFF island routes (i.e. Central – Cheung Chau and Central – Mui Wo), indicating that the island population will walk to other public transit locations for transfer. In this case, bus and MTR were of equal share (15 percent). Ferry routes of Kwun Tong–North Point (FF), Central–Tsim Sha Tsui (SF) and Wan Chai–Tsim Sha Tsui (SF) involved a significant proportion of ferry-bus transfers. These ferry piers are situated very close to major bus interchanges (except the relocated pier in Wan Chai).



Note: Fortune Ferry (FF), New World First Ferry: outlying island routes (NWFF_C), New World First Ferry: urban routes (NWFF(N)); Star Ferry (SF) and Tsui Wah Ferry (TW)

Figure 21. Main connecting transport mode(s) from the ferry pier to/from the activity locations

Respondents were also asked to evaluate their walking experience to and from the piers. Each respondent gave ratings to the two walking trips (i.e. walking to the piers from the origin or the last transit stop, and walking from the piers to the destination or the next transit stop) (see Figure 3). After consolidating the data, we investigated the overall walking experience in the major piers, including both urban piers (i.e. Central, Tsim Sha Tsui, Wan Chai, North Point, Kwun Tong and Aberdeen) and island piers (i.e. Cheung Chau, Mui Wo, Yung Shue Wan and Pak Kok Tsuen). For the harbour piers, we also differentiated the rating of walking experience in walking to/from the activity locations and public transit locations. As informed by the previous analysis (Figure 20), around 30 percent of the ferry trips were connected to/from other transport modes, in particular bus and rail. Therefore, it is important to highlight the walking experience in the multimodal transfer so that we can identify improvement areas. The major findings are summarised below:

- Central Pier No.7** (Figure 22): Around 70 percent of the samples who walked *to/from the activity locations* gave an overall rating of 6-7. The ratings for all walkability aspects (i.e. convenience, safety and comfort) are also relatively high. Those who walked *to/from transit locations* were generally satisfied with the overall walking experience (about 60 percent in 6-7). The poorer performance is in convenience (40 percent gave an average rating of 3-5 and a few gave a rating of 1-2) and comfort (half of the respondents gave an

average rating of 3–5). This implies that the experience of transferring to other transport modes is considered not very convenient and comfortable (e.g. walking distance and walking environment).

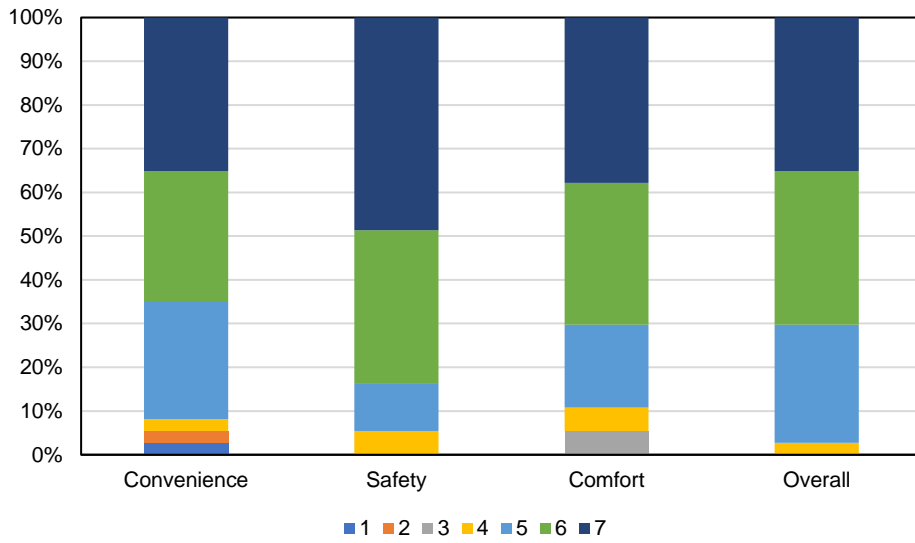
- **Central Pier No. 5 & 6** (Figure 23): Around 60 percent of the samples who walked *to/from the activity locations* gave an overall rating of 6-7. However, more than half of the respondents only gave an average rating of 3-5 to the convenience aspect. For walking *to/from transit locations*, most of the samples were generally satisfied. Around 30 to 40 percent only gave an average rating of 3-5 in convenience and comfort, with some only giving a low rating of 1-2 in these aspects.
- **Tsim Sha Tsui Star Ferry Pier** (Figure 24): Most of the respondents were satisfied with the walking experience *to/from the activity locations*. Around 60 percent of the samples gave a high rating of 6-7. The overall rating is also quite consistent in the three aspects. For walking *to/from transit locations*, most of the respondents were very satisfied with the walking experience, with over 70 percent of people indicating a rating of 6-7 for all aspects.
- **Wan Chai Ferry Pier** (Figure 25): Only around 40 percent of the respondents gave a rating of >5 for walking *to/from the activity nodes*. The score was the lowest among all ferry piers surveyed. In particular, convenience was the most poorly rated (55 percent in the rating of 3–5 and 15 percent in 1-2). The dissatisfaction was similar to those walking *to/from public transit locations*. Around 55 percent and 60 percent of the samples indicated a rating of ≤5 in convenience and comfort respectively. This is likely to be related to the relocation of the new piers and with ongoing construction nearby. Also, there is no longer a bus interchange near the pier, and the walking distance to the MTR station is also long.
- **North Point Ferry Piers** (Figure 26): Around 50 percent of the respondents gave a rating of 6-7 for the walking experience *to/from activity locations* and *public transit*. The major concern was about the comfort of walking, where some low ratings (1-2) were observed. Overall, the public transit locations and the major activities are close to the piers, but the walking environment has been affected by the ongoing construction next to the pier.
- **Kwun Tong Ferry Pier** (Figure 27): There were only observations for passengers walking *to/from activity locations*. Overall, people were satisfied with the walking experience (around 70 percent indicate a rating of 6-7). Again, several major activity nodes are located next to the pier.

- **Aberdeen Pier** (Figure 28): For passengers walking *to/from the activity locations*, their ratings in the three aspects of walkability were generally good. Overall, 60 percent indicated a rating of 6-7. For those walking *to/from transit locations*, around 65 percent of the people gave a rating of 6-7. However, half of the samples gave an average rating or below (≤ 5) in convenience.

At all these piers, there are room for improvement of walkability, especillay in terms of comfort and conveience.

Central Star Ferry Pier (Central Pier 7)

(a) Walking to/from activity locations



(b) Walking to/from public transit locations

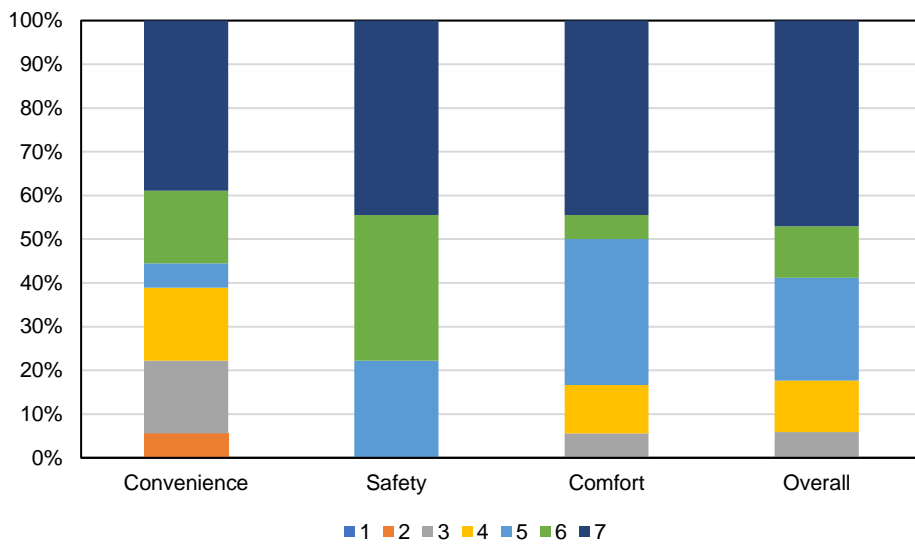
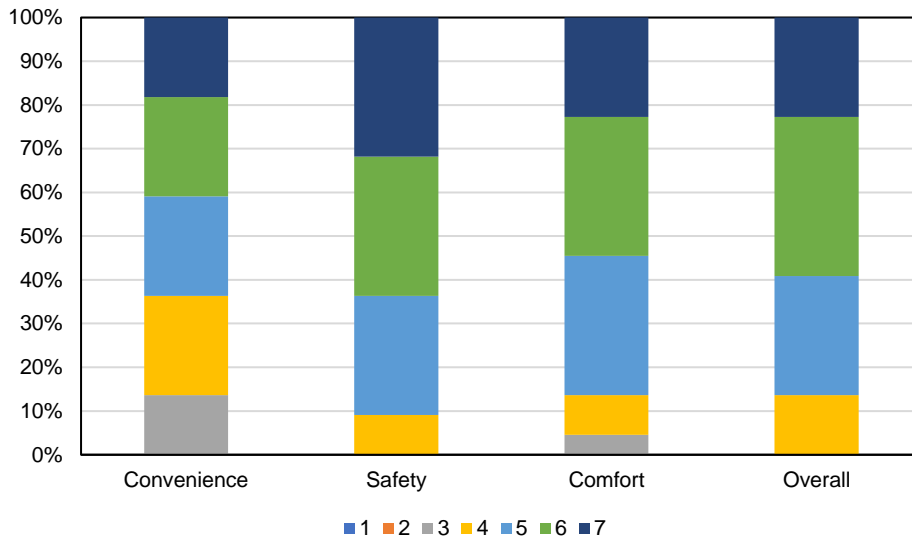


Figure 22. Walkability ratings at the Central Star Ferry Pier (Pier No. 7)

Central Ferry Pier (Central Pier 5 & 6)

(a) Walking to/from activity locations



(b) Walking to/from public transit locations

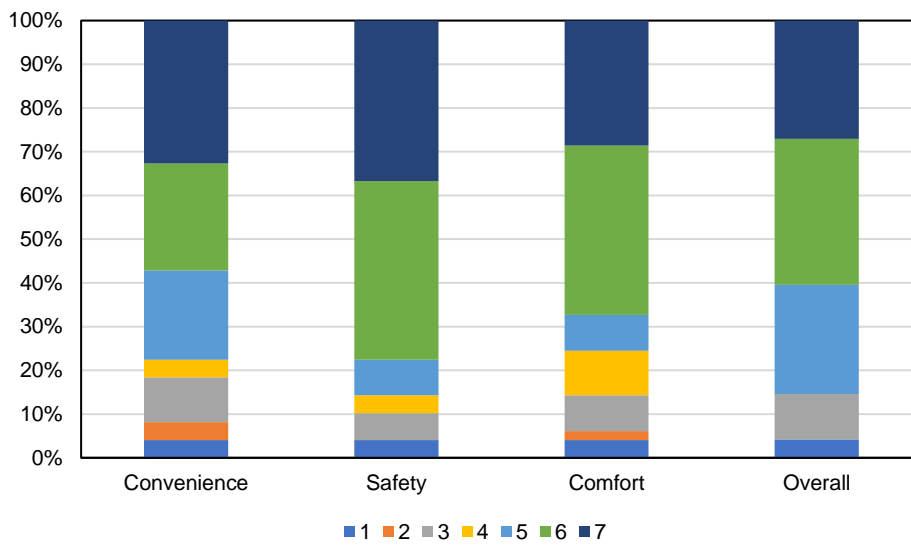
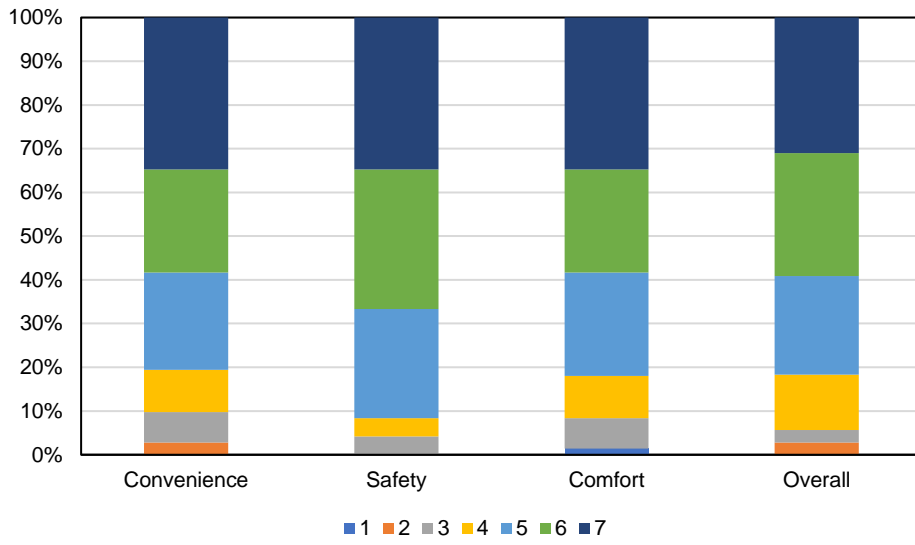


Figure 23. Walkability ratings at the Central Ferry Pier (Pier No. 5 & 6)

Tsim Sha Tsui Star Ferry Pier

(a) Walking to/from activity locations



(b) Walking to/from public transit locations

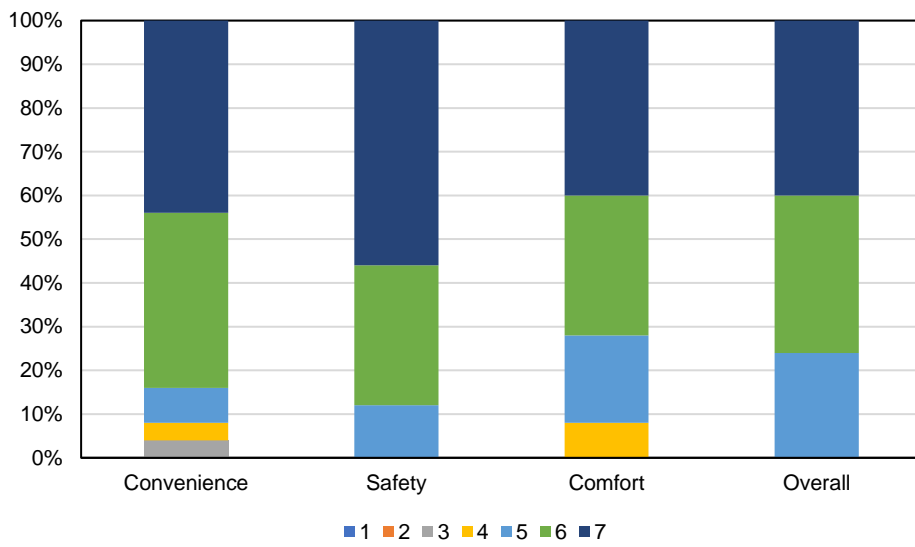
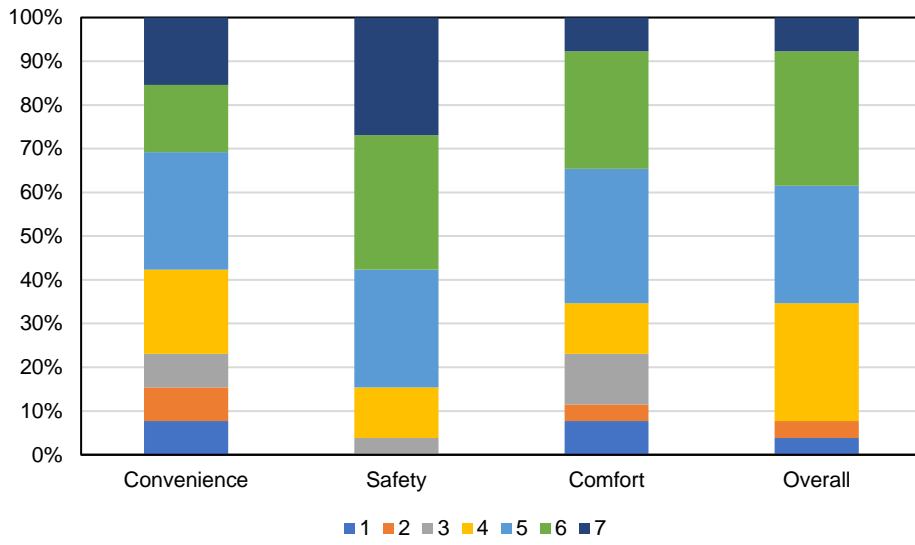


Figure 24. Walkability ratings at the Tsim Sha Tsui Star Ferry Pier

Wan Chai Ferry Pier

(a) Walking to/from activity locations



(b) Walking to/from public transit locations

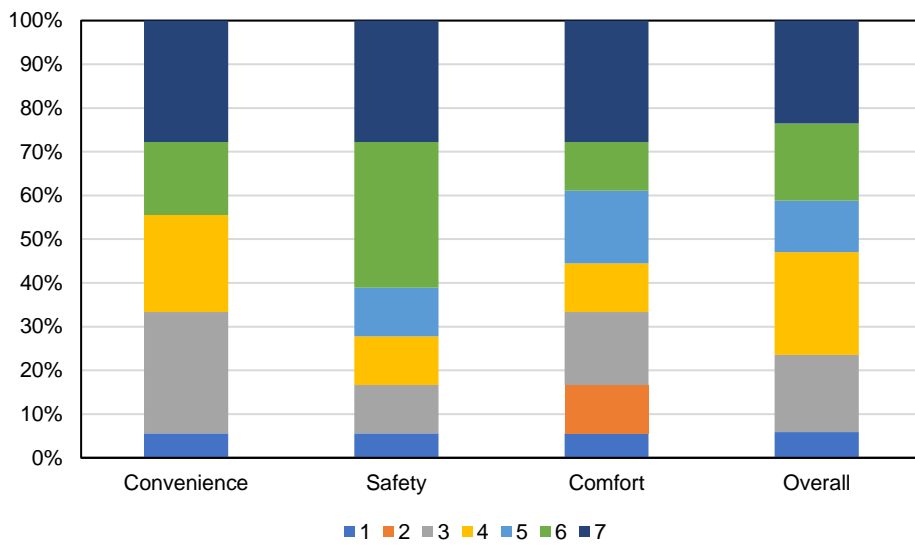
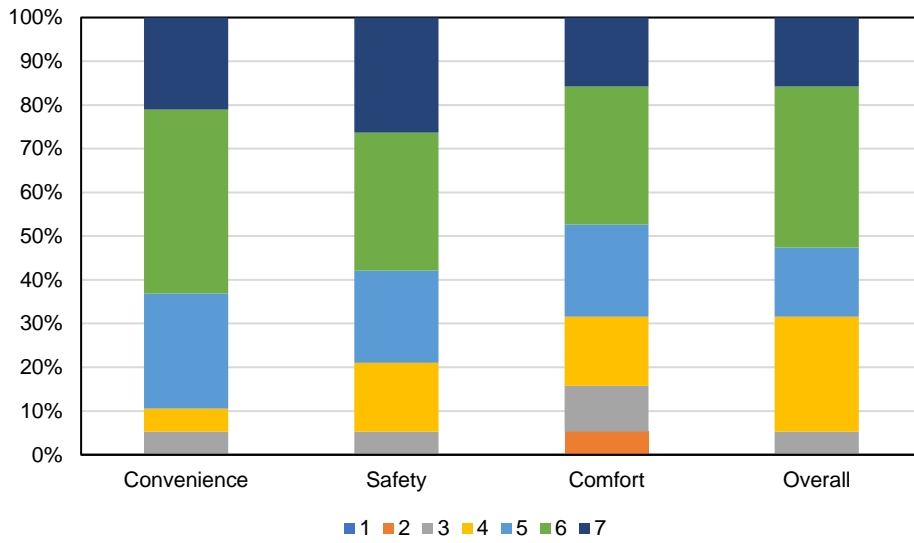


Figure 25. Walkability ratings at the Wan Chai Ferry Pier

North Point Ferry Pier and North Point (East) Ferry Pier

(a) Walking to/from activity locations



(b) Walking to/from public transit locations

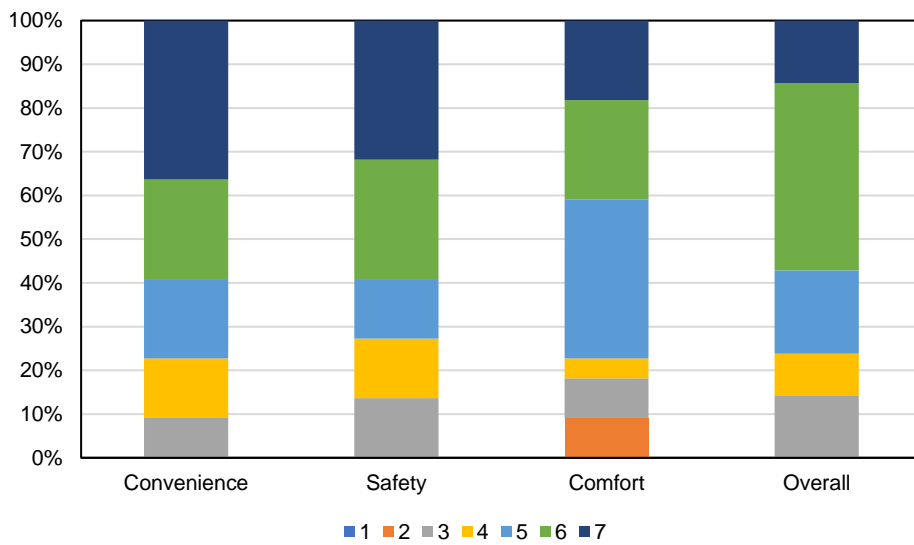
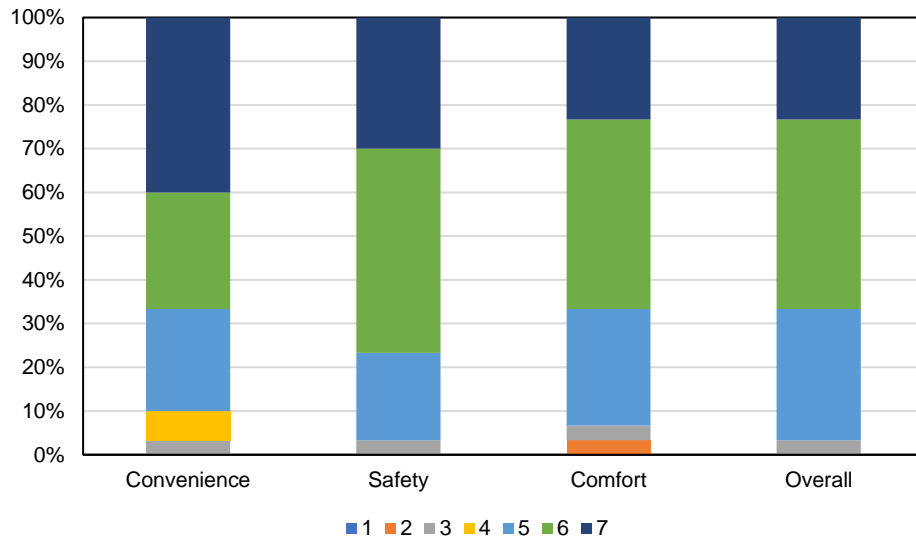


Figure 26. Walkability ratings at the North Point Ferry Piers

Kwun Tong Ferry Pier

(a) Walking to/from activity locations



(b) Walking to/from public transit locations

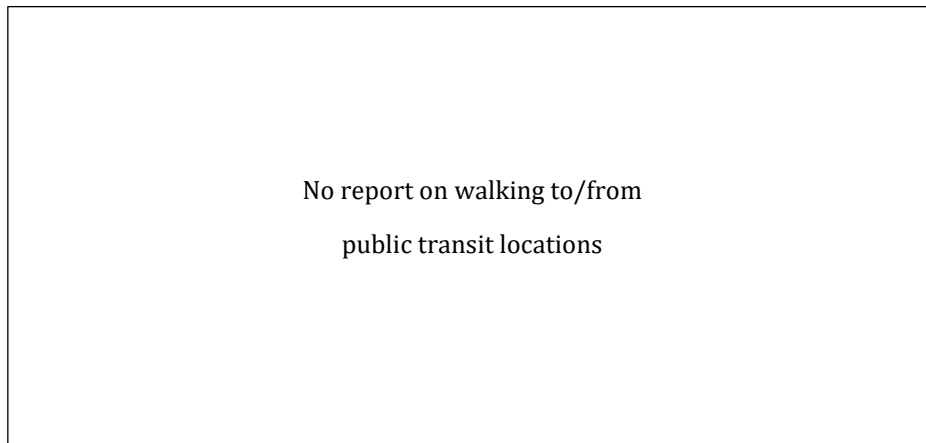
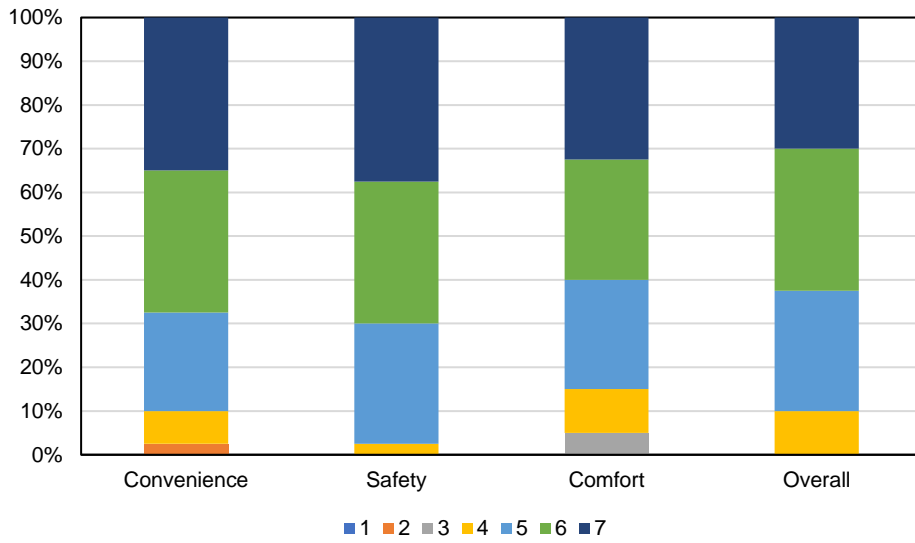


Figure 27. Walkability ratings at the Kwun Tong Ferry Pier

Aberdeen Pier

(a) Walking to/from activity locations



(b) Walking to/from public transit locations

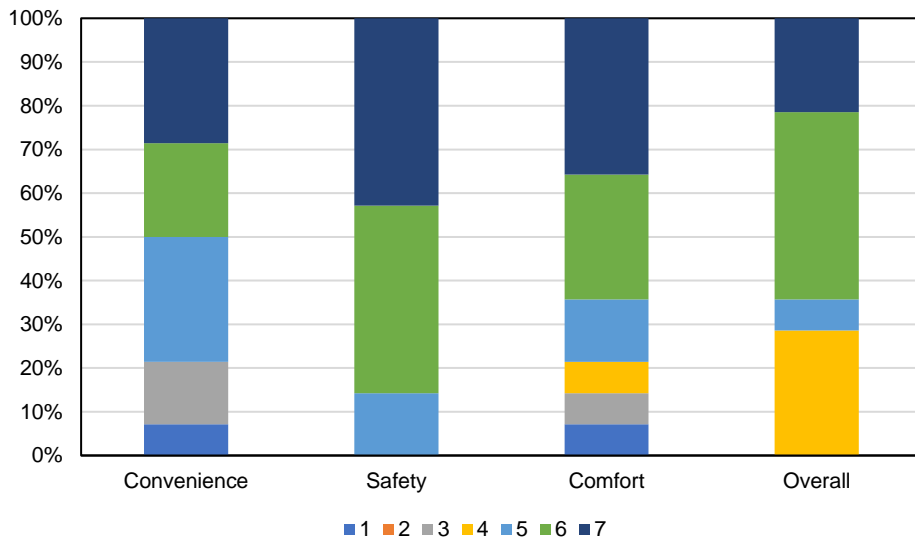


Figure 28. Walkability ratings at the Aberdeen Ferry Pier

We also examined the walkability ratings around the major piers on outlying islands.

- **Cheung Chau Ferry Pier** (Figure 29a): Around 60 percent of the respondents indicated a high rating of 6-7 in the overall rating of walkability. Three quarters of the samples felt that the walking trip was convenient and comfortable.
- **Mui Wo Ferry Pier** (Figure 29b): Respondents were very satisfied with their walking experience. Nearly 90 percent of the respondents gave a high overall rating of 6-7. Nonetheless, nearly 60 percent gave an average rating in convenience.
- **Yung Shue Wan Ferry Pier** (Figure 29c): Respondents were generally satisfied with their walking experience. Around 65 percent of the respondents indicated a rating of 6-7 in the overall rating. Ratings of the three aspects of walkability were also consistent.
- **Pak Kok Tsuen Ferry Pier** (Figure 29d): Respondents were very satisfied with their walking experience. Over four-fifths of the respondents indicated a rating of 6-7 in all aspects of walkability.

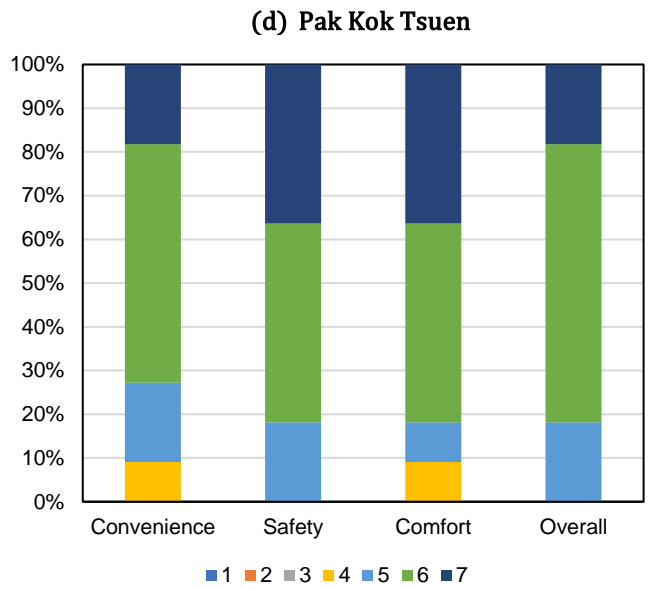
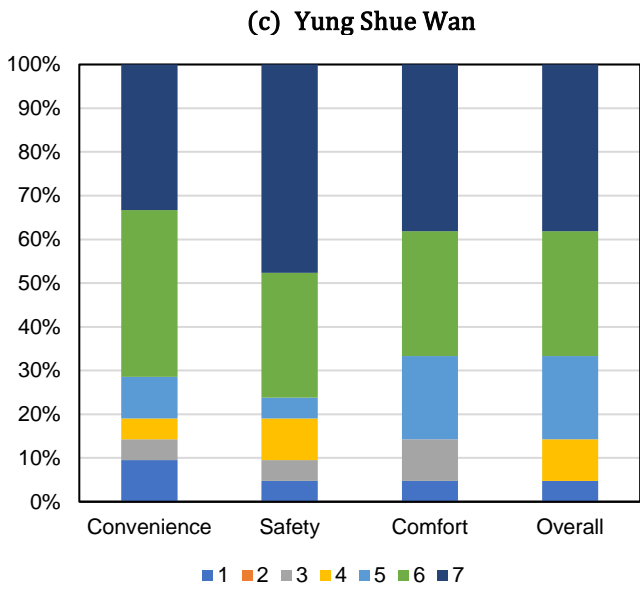
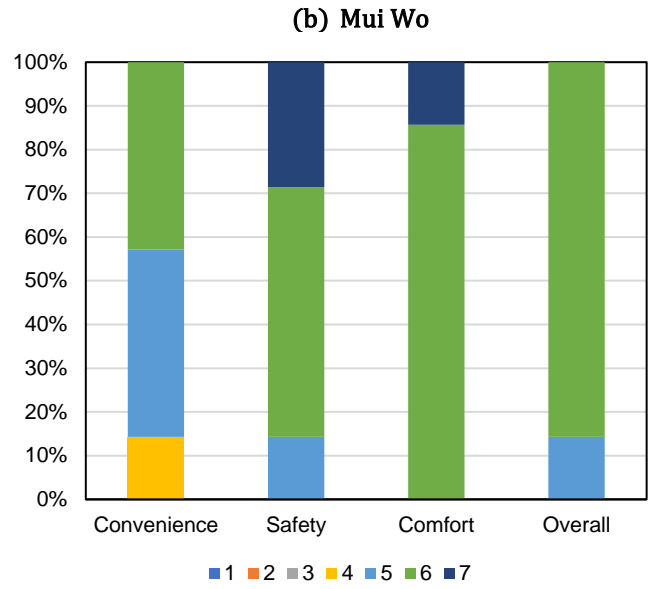
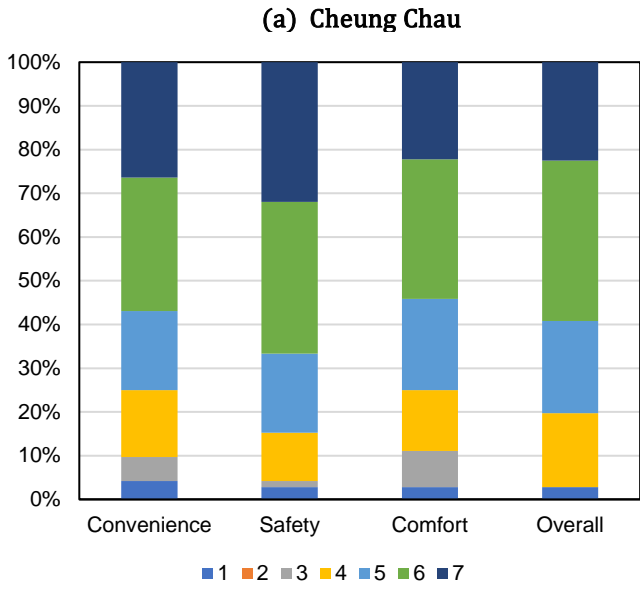


Figure 29. Walkability ratings at major piers on outlying islands

4.2.2 Views of frequent ferry passengers

Table 9 depicts the satisfaction to the existing ferry services based on six important service attributes (i.e. fare, punctuality, frequency, safety, trip time and comfort). The inner harbour routes (i.e. Central-Tsim Sha Tsui and Wan Chai-Tsim Sha Tsui) generally have a good performance in all indicators. Star Ferry routes received the highest ratings among all, with the average satisfaction rate over 5.5 in all aspects. For other inner harbour routes connecting North Point to Hung Hom (NWFF_N) and Kwun Tong (FF), the rating for both routes were generally decent with an overall rating of >5.5. However, frequency was the least satisfactory service indicators for both routes. Currently, the average frequency is 20-30 minutes. For the outlying island routes, the worst performer was the ferry route connecting Aberdeen (FF). Again, frequency was the poorest indicator with a satisfaction rate below 4. For the NWFF island routes (i.e. Central-Cheung Chau and Central-Mui Wo), fare received the lowest rating of around 4. Cheung Chau route's fare was on average rated 3.86 out of 7. The current adult fare on a weekday is \$13.60 (ordinary service) or \$26.80 (fast ferry service).

Table 9. Average satisfaction about ferry services (by ferry route)

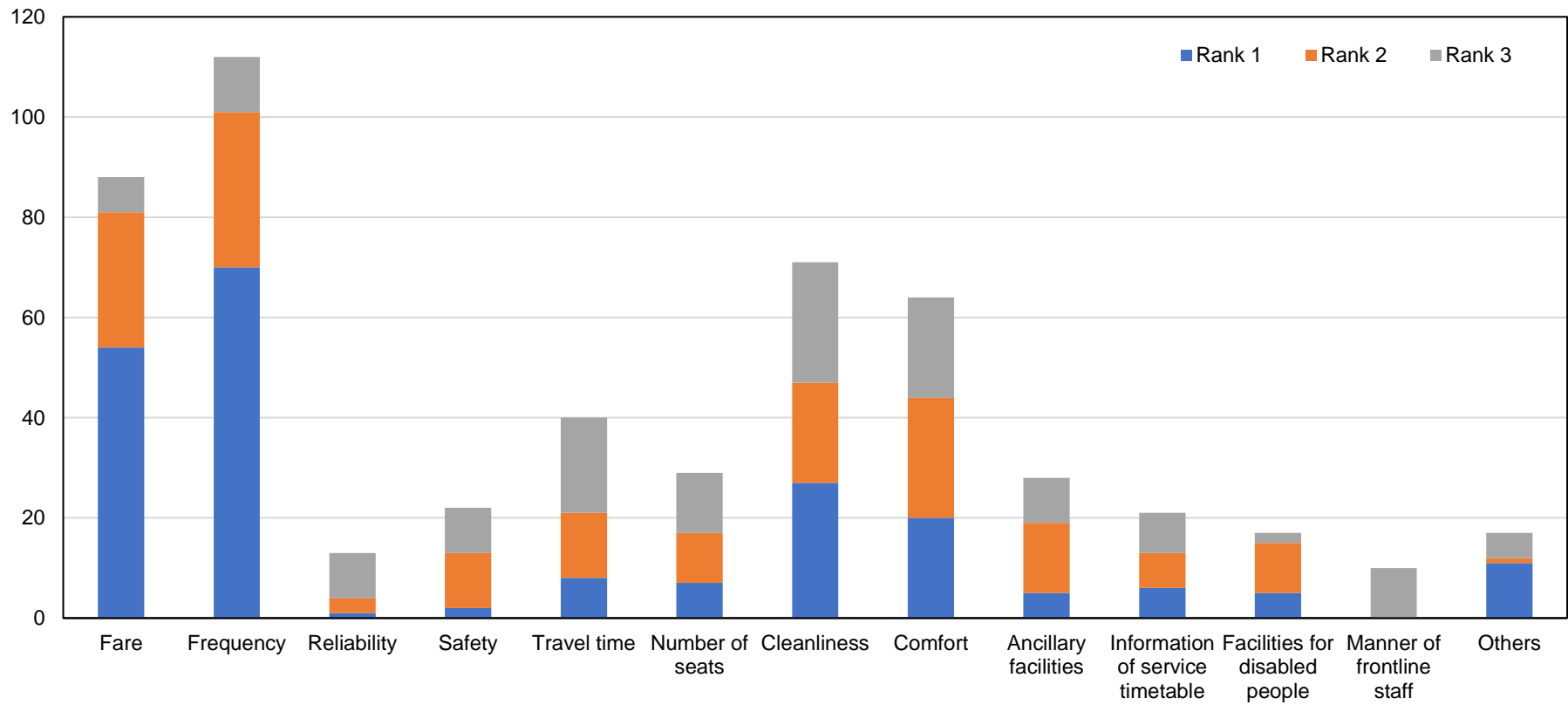
Route	Fare	Punctuality	Frequency	Safety	Trip time	Comfort	Overall
I1	6.35	6.42	6.28	6.37	6.47	6.02	6.29
I2	5.91	6.07	5.72	6.07	5.98	5.74	5.93
I5	5.44	5.44	4.67	5.67	6.00	5.67	5.67
I7	5.90	6.33	4.47	5.80	5.87	5.73	5.69
O1	3.86	5.03	4.91	5.61	4.91	4.86	4.88
O2	4.33	6.11	4.56	6.00	5.11	5.56	5.56
O8	4.40	5.70	3.30	5.00	5.20	5.00	4.70
O9	4.23	5.92	3.59	5.41	5.51	5.08	4.79

Note: The rating of satisfaction is based on a 7-point Likert scale. "1" is "very unsatisfied" and "7" is "very satisfied".

I1	Tsim Sha Tsui-Central
I2	Tsim Sha Tsui-Wanchai
I5	North Point-Hung Hom
I7	North Point-Kwun Tong (via Kai Tak)
O1	Central-Cheung Chau
O2	Central-Mui Wo
O8	Aberdeen-Cheung Chau
O9	Aberdeen-Pak Kok Tsuen-Yung Shue Wan

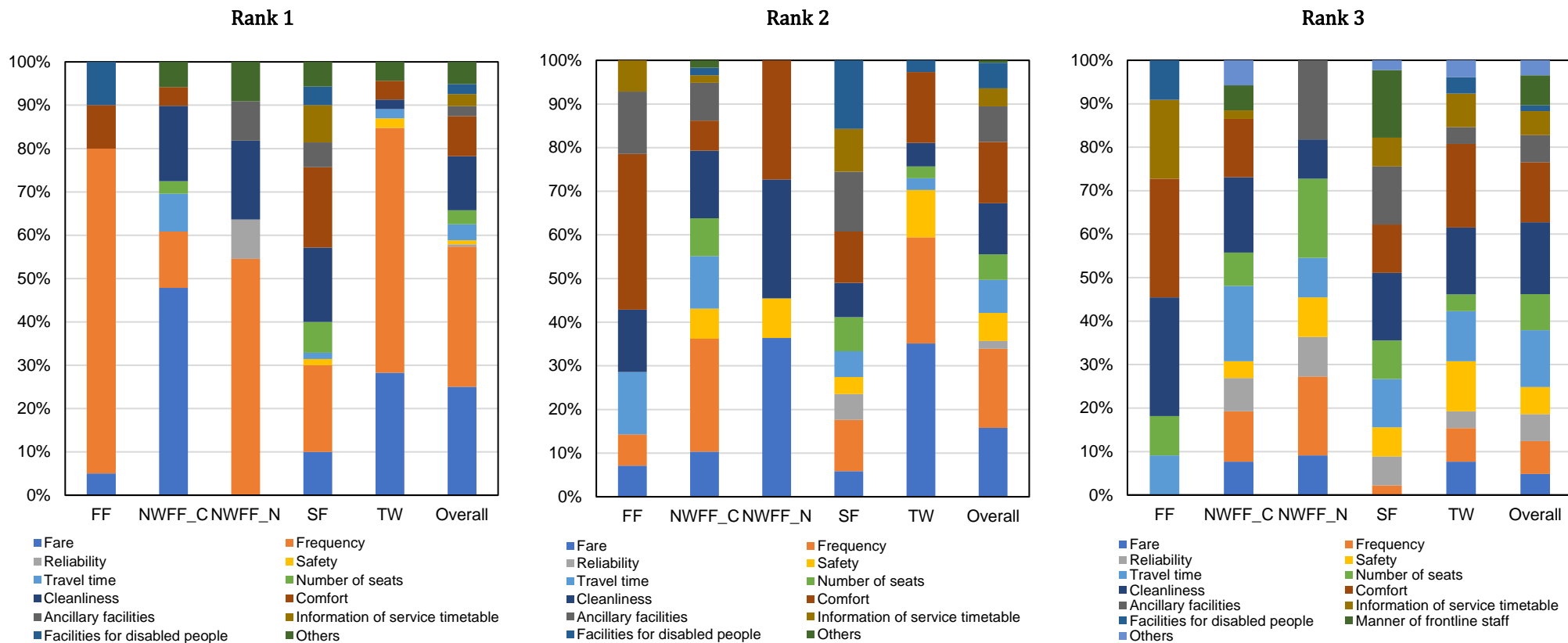
When looking at the priority areas for improvement of the overall ferry service in Hong Kong as indicated by the frequent ferry travellers (Figure 30), they were mostly related to **frequency** and **fare**. The top priorities (i.e. Rank 1) for improvement are frequency, followed by fare, cleanliness and comfort. Rank 2 also displays a similar pattern. For Rank 3, respondents are mostly concerned with cleanliness, comfort and travel time. To highlight, apart from fare and frequency, a significant number of respondents thought that there is room for improvement in enhancing the quality of the **on-board experiences** (i.e. cleanliness and comfort).

Since the expectations for ferry services can depend on specific routes, we conducted a more in-depth analysis of people's choices on the improvement areas by ferry operators (Figure 31). There are significant variations among different operators. For the less popular inner harbour routes (i.e. North Point-Kwun Tong/Kowloon City/Hung Hom), people considered an increase of **frequency** as their top priority. The same applies to the less popular island routes departing from Aberdeen (i.e. Aberdeen-Yung Shue Wan). For the Central-Cheung Chau and Central-Mui Wo routes, people regarded "lowering the **fare**" as the most important improvement area. In addition, some interesting results are observed in Star Ferry, where only 30 percent of the samples indicate fare and frequency as the top priority areas. This can be explained by the relatively low fare (\$2.70-\$3.70/trip) and high frequency (around 10 minutes) of the ferry service. **Comfort**, **cleanliness** and **information** of service timetable are also their top concerns. For Rank 2 and Rank 3 attributes, a more diverse pattern is observed. Overall, improving the comfort and cleanliness on ferry remains an important concern across ferry routes. **Travel time** and number of seats at the **waiting areas** are also the important improvement areas as stated in Rank 3.



Note: Respondents are asked to rank the most important three priority improvement areas for the existing ferry service. Rank 1 is the top priority.

Figure 30. Priority areas for improvement of overall ferry service (frequent passengers)



Note: Respondents are asked to rank the most important three priority improvement areas for the existing ferry service. Rank 1 is the top priority.

Figure 31. Priority areas for improvement of overall ferry service (frequent passengers) by ferry operators

When they are not using ferry services and alternative transport modes are available, three quarters of the frequent ferry travellers' group would take MTR and the other one quarter would take a bus (Figure 32). Again, this implies that the relatively well-established rail network and its continuous extension have created a strong competition to the current ferry service.

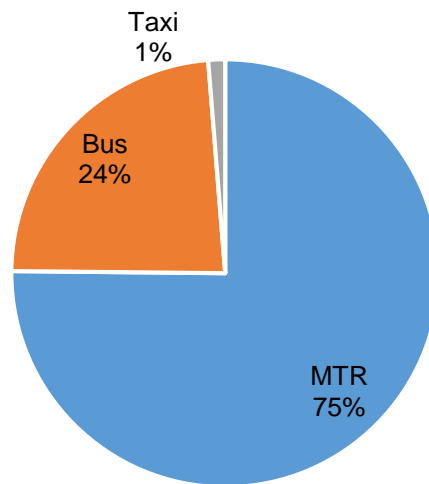


Figure 32. Preferred alternative public transport mode when not taking a ferry to the destination

When asked about the major reasons for choosing ferry instead of other public transport modes, only one-fifths of the respondents indicated that the higher affordability was an important factor (Figure 33). Shorter travel time spent to visit their desired destinations was also a relevant factor. Generally, travel cost and time are considered instrumental factors in transport choice. Nonetheless, they cannot be changed easily. In the survey, 35 percent of the respondents actually considered non-instrumental factors (i.e. **more comfortable experience, like to be close to the sea, and being able to enjoy the beautiful sea view**) to be important reasons of ferry travel. This signifies that ferry can provide some unique experience to the passengers that other transport modes may not be able to deliver. Providing a special ferry experience is highly promising. In addition, 15 percent of the samples indicated that having a **walkable environment near the piers** and **good connections to other public transport** were reasons for them to choose to travel by ferry.

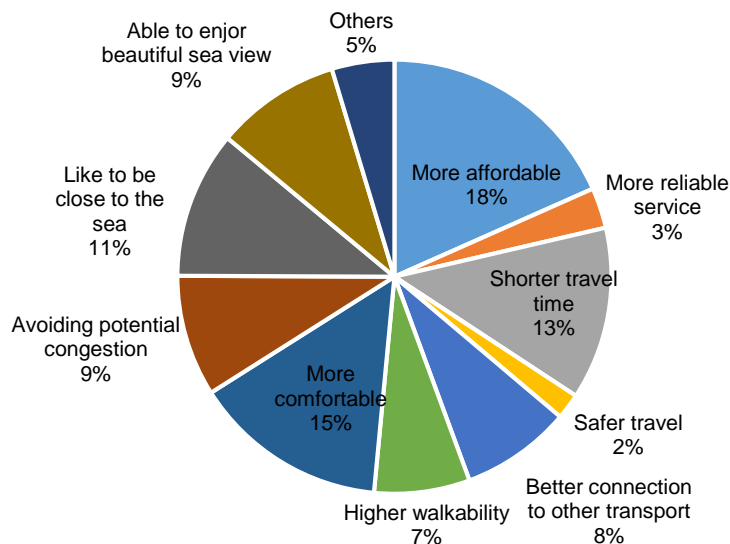
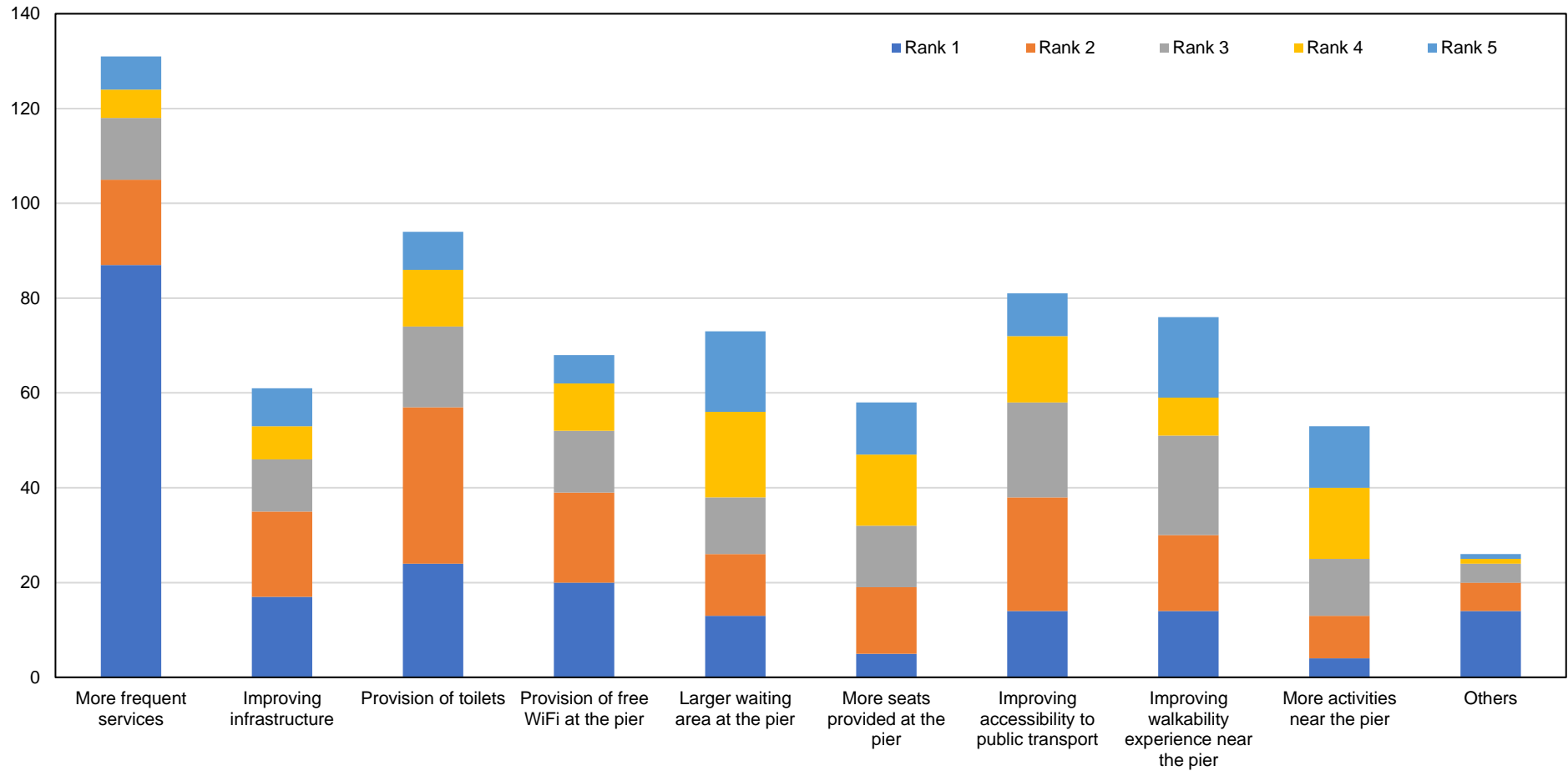


Figure 33. Reasons for choosing the ferry instead of other public transport modes

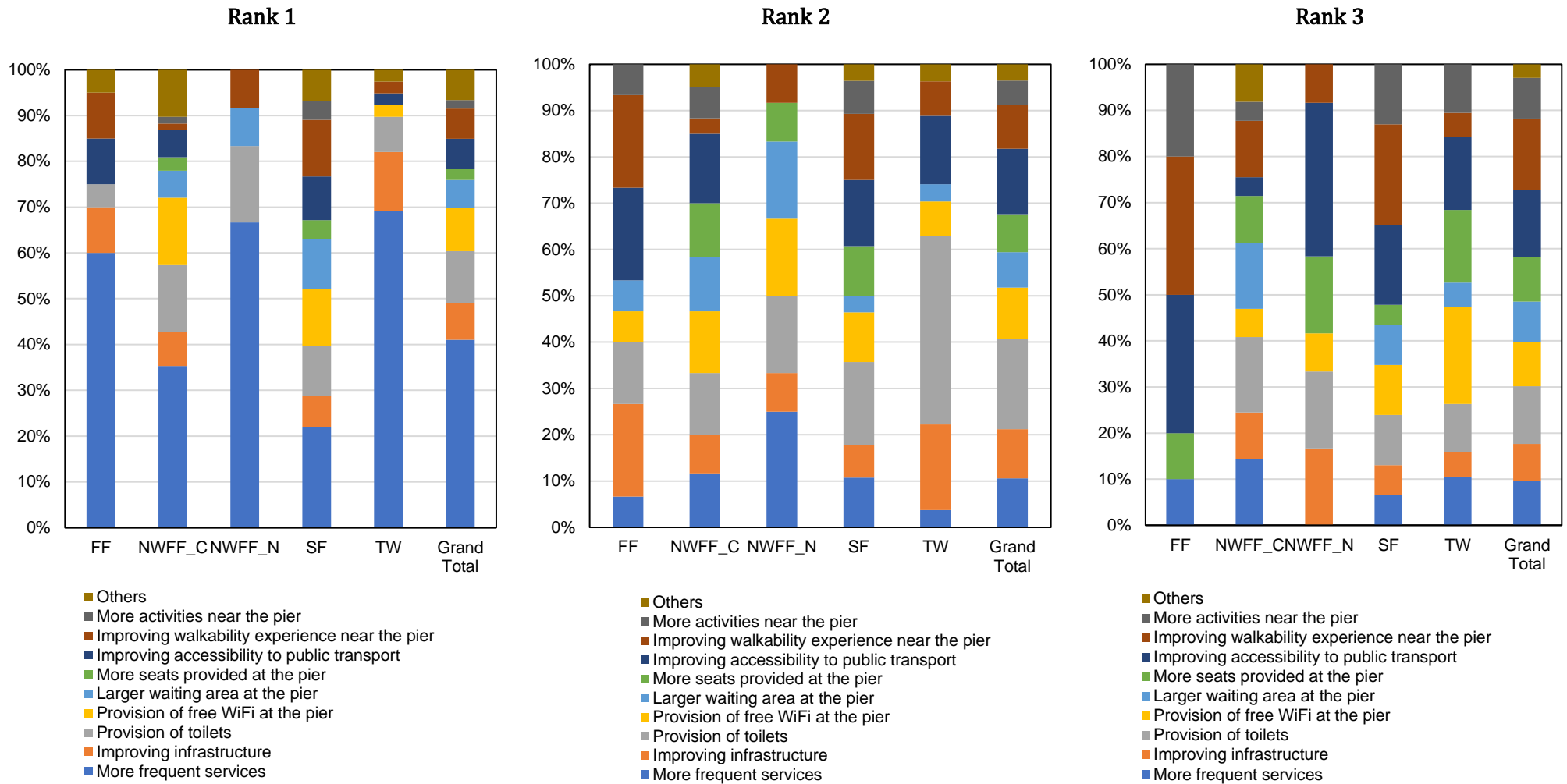
Other than fare reduction, offering “more frequent services” was chosen as the most important reason of making ferry travel more satisfactory (Figure 34). Interestingly, the second most important factor was the “provision of toilet at the piers”. The third most important attribute was “improving accessibility to public transport”. “Improving walking experience near the pier” was the fourth most important. In fact, the results here suggest that improving the **experience of frequent ferry passengers while waiting at the piers** (i.e. provision of adequate toilets, free Wi-Fi provided, larger waiting areas and more seats provided) are relevant to the satisfaction of ferry services.

Figure 35 shows some additional analysis by ferry operator. There are significant variations among different operators. Consistent with the preferences shown in Figure 30, an increase of frequency was an important factor that can make ferry travel more attractive (previously indicated as the priority improvement area) for the less popular inner harbour routes (i.e. North Point-Kwun Tong/Kowloon City/Hung Hom). For the Central-Cheung Chau and Central-Mui Wo routes, the provision of toilets and free Wi-Fi at the piers were important. This can be due to the relatively longer waiting time and longer journey time. The expectations for Star Ferry were more diverse. The provision of toilets and free Wi-Fi, improving walkability near the piers, and improving connection to public transit were equally important as indicated as the top rank. The findings highlight that **improving waiting areas** at the piers and the **transfer experience** are relevant in affecting people’s willingness to travel by ferry.



Note: Respondents are asked to rank five most important factors that can make their ferry travel more satisfactory. Rank 1 is the top priority.

Figure 34. Factors that can make ferry travel more satisfactory (frequent passengers)

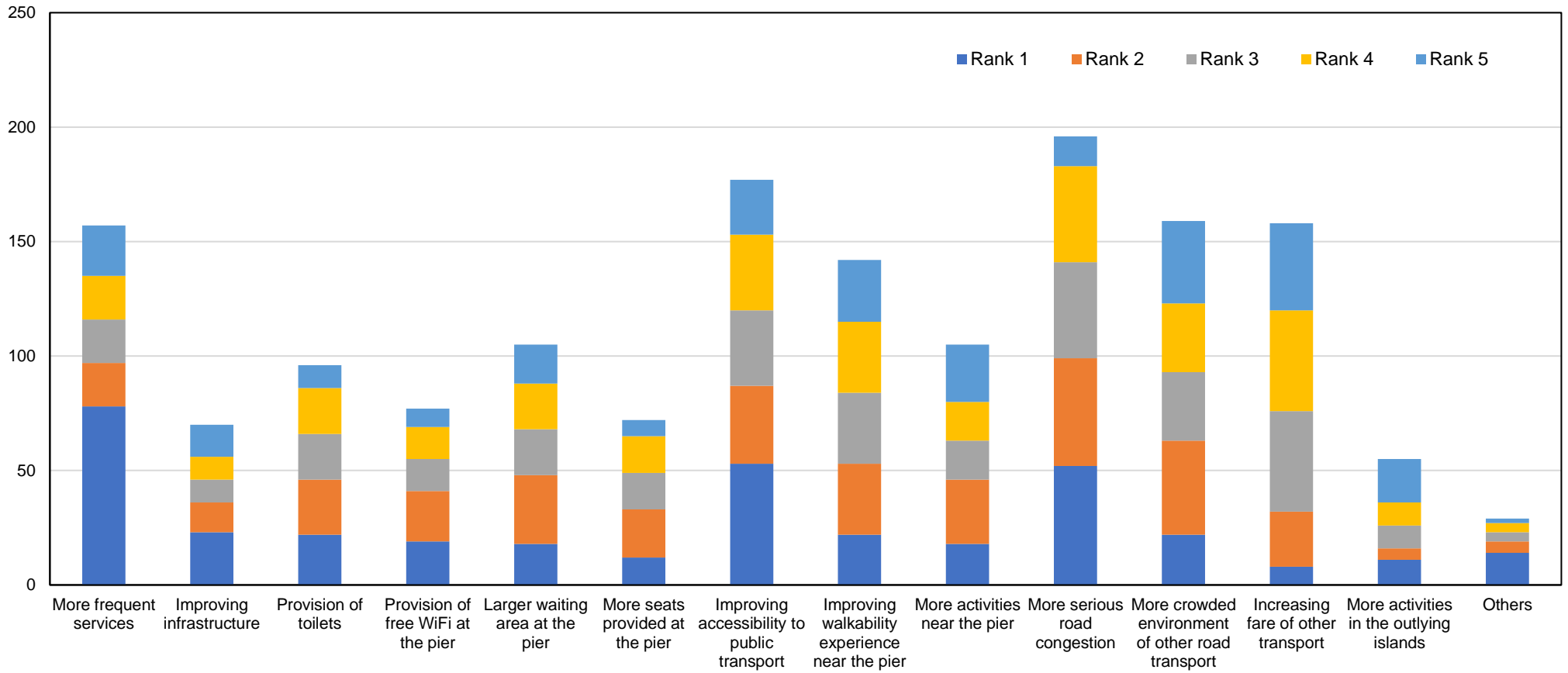


Note: Respondents are asked to rank five most important factors that can make their ferry travel more satisfactory. Rank 1 is the top priority.

Figure 35. Factors that can make ferry travel more satisfactory (frequent passengers) by ferry operators

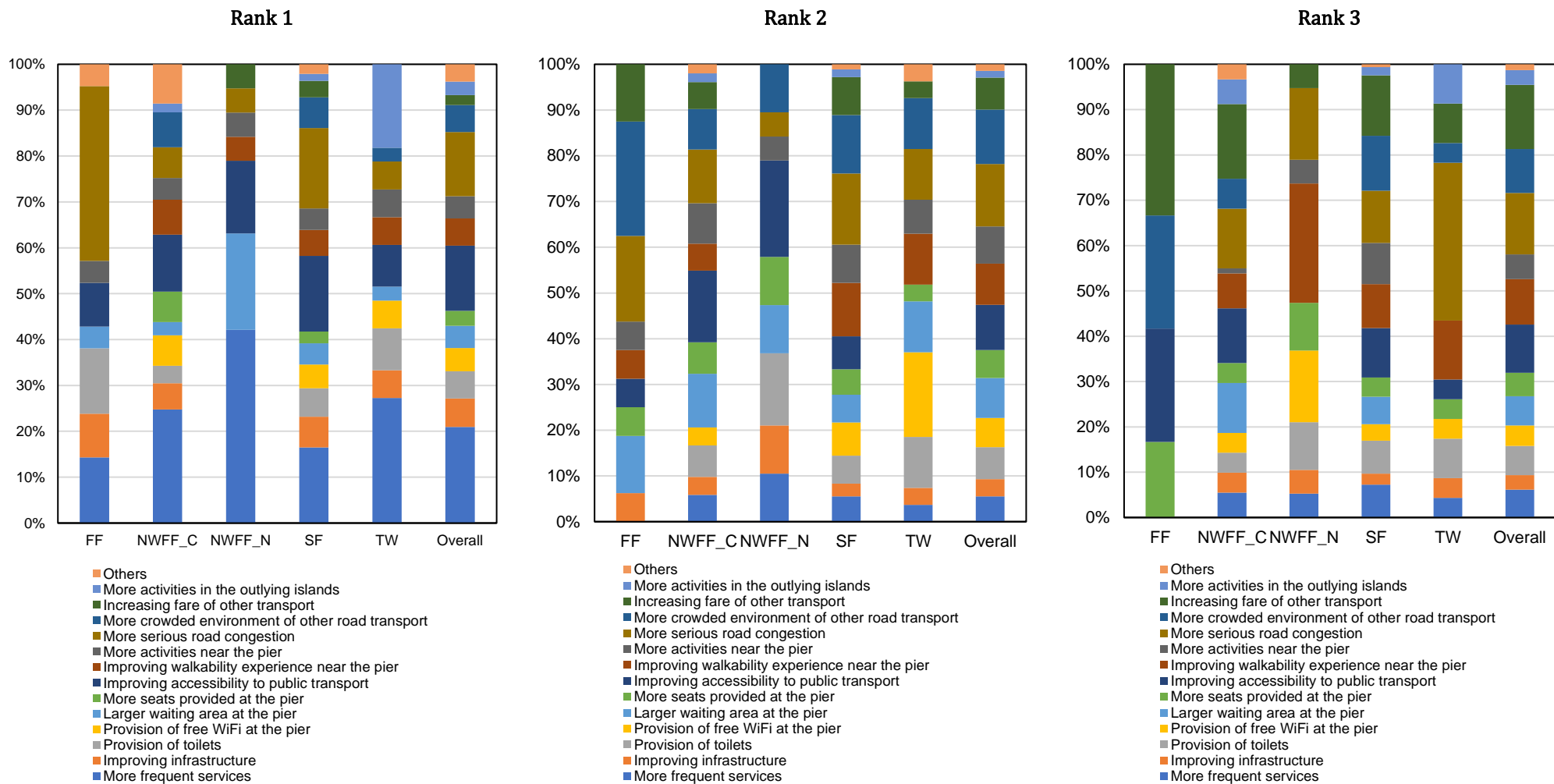
4.2.3 Views of non-frequent ferry passengers

When looking at the most important factors (except fare reduction) that can enhance the willingness of travelling by ferry among non-frequent passengers (Figure 36), “more serious road congestion” was considered the most important when all top five ranks are pooled. This factor was not typically rated as the most important factor (Rank 1) but was typically identified as a relevant factor in the top five ranks. The third and the fourth most important factors (more crowded road environment and increasing fare of public transport) were also related to other transport modes. In fact, these three factors were **external “push” factors** that can enhance the attractiveness of ferry travel to non-frequent passengers. This suggests that if the conditions for travelling by other road public transport modes become more unfavourable, some of the travellers would shift to ferry transport. The most important “pull” factor was “improving accessibility to public transport”, which was overall the second most important factor. This conveys a strong message that ferry can have significant potentials for multimodal transfer, provided that the connection to other modes are convenient. **Improving walking experience** is almost as important as providing more frequent service, further indicating that a more walkable environment for connecting to/from the desired activity locations and public transit locations is of utmost importance. Again, we provide a breakdown composition by ferry operators (Figure 37). There are some variations among different operators. As expected, “more frequent service” was a significant factor of increasing the willingness of taking a ferry. Improving accessibility to public transport and walkability near the piers were also indicated as important factors across all ranks. More serious road congestion was identified as a dominant reason for people to take the North Point-Kwun Tong ferry route (FF), implying that this route is fairly competitive in terms of offering an alternative cross harbour route between Hong Kong island and the Kowloon peninsula.



Note: Respondents are asked to rank five most important factors that can enhance their willingness of travelling by ferry. Rank 1 is the top priority.

Figure 36. Factors that can enhance the willingness to travel by ferry (non-frequent passengers)



Note: Respondents are asked to rank five most important factors that can enhance their willingness of travelling by ferry. Rank 1 is the top priority.

Figure 37. The most important factors that can increase willingness to travel by ferry (non-frequent passengers)

We also asked respondents about new routes that they would consider taking if they are available. We presented the three most popular suggested routes and the expected fare, frequency, travel time and number of trips for these routes (Table 10). Some of the pier locations which are closer together are grouped together to reflect a broader picture. The top three ferry routes that the respondents would consider taking (but not currently available) are (i) **Central-Hung Hom / Western Kowloon Cultural District**, (ii) **Central-Kwun Tong / Kai Tak** and (iii) **North Point-Tsim Sha Tsui / Western Kowloon Cultural District**.

The expectations for the Central-Hung Hom / Central-Hung Hom / Western Kowloon Cultural District route were **generally similar to Star Ferry services** in terms of fare, travel time and frequency (where expected frequency is mostly between 10 and 20 minutes, and the route will reduce the travel time with lower fare). The expected number of trips per week was 1-3 times a week and less than once a week. For the second and third choices, Central-Kwun Tong/Kai Tak and North Point-Tsim Sha Tsui are actually with a shorter travel distance in ferry travel when compared to road and rail transport (similar to diagonal lines). They offer direct travel route without any transfer between rail lines. People generally expect that the fare to be slightly cheaper than other alternatives with a service interval between 10 and 20 minutes.

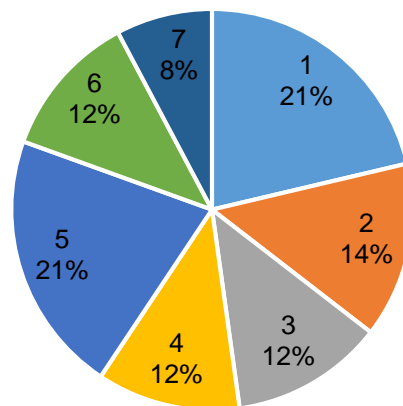
Table 10. New ferry routes that survey respondents would consider taking

Ferry route	Number	Expected fare	Expected travel time	Expected frequency	Expected number of trips per week				
Central – Hung Hom / Western Kowloon Cultural District	30	30% cheaper	9	30% lower	8	more than 3 times a day	1		
				15% lower	10	1-2 times a day	1		
		15% cheaper	9	Same	8	4-6 times a week	2		
		Same	12	15% higher	4	1-3 times a week	13		
					Less than once a week	13			
Central – Kwun Tong/Kai Tak	27	30% cheaper	4	15% lower	12	every 10 mins	13	1-2 times a day	3
		15% cheaper	5	Same	4	every 20 mins	6	4-6 times a week	3
		Same	13	15% higher	10	every 30 mins	7	1-3 times a week	11
		15% more expensive	5	30% higher	1	every 45 mins	1	Less than once a week	10
North Point – Tsim Sha Tsui/Western Kowloon Cultural District	24	30% cheaper	6	15% lower	8	every 10 mins	4	1-2 times a day	1
		15% cheaper	11	Same	7	every 20 mins	13	4-6 times a week	1
		Same	7	15% higher	5	every 30 mins	5	1-3 times a week	8
				30% higher	4	every 45 mins	1	Less than once a week	14
					every 60 mins	1			

4.2.4 Perceptions towards potential ferry development

(a) Water Taxi service

Figure 38 illustrates the proportion of agreement levels on developing water taxis in Hong Kong. The overall opinion was **mixed**. Around 40 percent of the respondents were relatively positive (5-7) towards the development of water taxis. However, more than 40 percent of the respondents did not agree with this initiative (1-3).



Note: Respondents were asked to indicate whether they think the water taxi service (non-regular kaito ferry service) should be expanded on a Likert Scale. “1” represents “mostly disagree”. “7” represents “mostly agree”.

Figure 38. Rating of potential development on water taxis

For those who were positive towards the development of water taxi service (5-7), the average fare per passenger per trip was around HKD 26.5, with a standard deviation of 34.6. Around 40 percent of the respondents indicated that they would only pay HKD 10 or below for such service, and around 25 percent indicated that they would pay between HKD 10 and HKD 20. Respondents were also asked to propose some water taxi (non-regular kaito ferry) stops in mind. Table 11 lists out the top 20 locations indicated by the respondents. When looking at urban piers, the most accessible areas of Central and Tsim Sha Tsui have the highest total “votes”, followed by North Point, Kwun Tong, Aberdeen and Hung Hom. For outlying islands, the highest number was Cheung Chau, followed by Mui Wo, Lamma Island and Peng Chau. Around 15 to 20 respondents did not have any specific place/pier in mind, but would like the water taxi to serve the more remote areas / other outlying islands / hiking regions / tourist areas of Hong Kong.

Table 11. Top 20 water taxi (non-regular kaito ferry) stops

Location	Count	Percentage (%)
Central	80	13.77
Tsim Sha Tsui	66	11.36
Cheung Chau	43	7.40
North Point	42	7.23
Kwun Tong	26	4.48
Wan Chai	26	4.48
Aberdeen	23	3.96
Hung Hom	23	3.96
Causeway Bay	12	2.07
Kowloon City	12	2.07
Mui Wo	12	2.07
Lamma Island	11	1.89
Peng Chau	9	1.55
Sai Wan Ho	9	1.55
Tai O	9	1.55
Tuen Mun	8	1.38
Kai Tak	7	1.20
Sheung Wan	7	1.20
Tsuen Wan	7	1.20
Discovery Bay	6	1.03
Total	438	75.38

Note: Each respondent may come up to 5 stops. There is a total of 581 suggested locations.

(b) Recommissioning of “Central – Hung Hom” ferry route

Respondents were presented four cases of different service combinations for the “Central–Hung Hom” ferry route. Each stated preference game has four options with different levels of fare, frequency, travel time and operational hours. As respondents might not have ideas on the exact value, the options were set in relation to other public transport modes. For example, the options for fare include “10 percent higher compared to other public transport”, “same as the other public transport” and “10 percent lower when compared to other public transport”. Table 12 illustrates a sample choice basket presented to the respondents. To enhance the understanding of the variations of the levels of service (LoS) attributes (fare, frequency, travel time and operation hours), some background information is given to respondents on the alternative public transport modes with a similar origin and destination. Specifically, the reference information below is presented before the stated preference game.

<p>Route: Central – Hung Hom <i>Current details of other public transport modes (e.g. Bus)</i> Single fare: \$9.80 (Adult) Frequency: Every 5 to 12 minutes Travel Time: around 30 minutes Operation Hours: 05:45 – 00:30</p>

Table 12. A sample scenario presented to the respondents

	選擇1 Option 1	選擇2 Option 2	選擇3 Option 3	選擇4 Option 4
票價（與現時其他公共交通工具票價比較） Fare compared to other public transport	高10% 10% higher	高10% 10% higher	同樣 Same	低10% 10% lower
班次（與現時其他公共交通工具票價比較） Frequency compared to other public transport	低20% 20% lower	同樣 Same	同樣 Same	高20% 20% higher
交通時間（與現時其他公共交通工具時間比較） Travel time compared to other public transport	同樣 Same	高20% 20% higher	高20% 20% higher	低20% 20% lower
營運時間 Operation hours	07:00 - 19:30	06:00 - 23:30	07:00 - 19:30	06:00 - 23:30
空調 Air-conditioned	有 Yes	有 Yes	沒有 No	沒有 No
你認為最好的選擇 Your most preferred option	○	○	○	○

With the individual preferences collected, a multinomial logistic regression (MNL) is conducted to examine the relative importance of different LoS attributes. Interestingly, though fare has a negative utility (right sign), it is not statistically significant at 0.05 level. This also suggests that a lower fare per 10 percent when compared to other public transport (e.g. bus) may not attract significant ferry patronage. Frequency and operational hours have positive coefficients, implying that respondents preferred higher frequency and longer operational hours. Travel time also displays a negative coefficient, suggesting that shorter travel time by ferry is also beneficial. Three independent variables of frequency, travel time and operation hours are statistically significant at 0.05 level.

Table 13. Results of the Multinomial Logit (MNL) model about preferences of ferry services

	Coef.	s.e.	<i>t</i>
Fare	-0.02	0.02	-0.59
Frequency	0.15***	0.01	9.63
Travel time	-0.03***	0.01	-6.07
Operation hours	0.14**	0.05	2.53
Number of respondents	656		
Number of choice tasks	2624		
Log-likelihood	-3424.73		

4.3 Structured interviews with ferry operators

The major interview results are presented following the structure of the questionnaire (Section 3.3). Major responses from the ferry operators are summarised in Tables 14 to 18. Table 14 presents a preliminary analysis of the business models for current ferry operators. Except for the Hong Kong Ferry (Holdings) Company Limited, other ferry operators are now operating passenger routes. There are several common characteristics. First, although the major source of income is farebox revenues (i.e. fares collected from passengers), there is some side business (i.e. local ferry tours and ferry rental) to supplement the income. New World First Ferry has the largest number of vessels with the highest carrying capacity in Hong Kong (~13,000). Only Star Ferry is operating as franchised service with a longer stability (fifteen years in its latest renewed franchise of 2018). Other operators are all operating under a licensed service (the reviewing period is every three years).

Table 14. Current business models of major ferry operators in Hong Kong

Ferry operators	Business model
Fortune Ferry	<ul style="list-style-type: none"> • There are 1 inner harbour route and 1 outlying island route. • Fare revenue cannot support the costs for both routes. • Income needs to be supplemented by income from rental income and advertisement. • \$2 dollar for elderly scheme and half concessionary price has reduced the revenue by 1 to 1.5 million.
Hong Kong Ferry	<ul style="list-style-type: none"> • The passenger ferry business has shrunk and finally the service was terminated in 1999. • The operator now operates the vehicular ferry route between Kwun Tong and North Point, relying on the fixed demand from vehicles (i.e. dangerous goods vehicular ferry service). • The operator offers tourist ferry tours at night (i.e. Harbour Cruise – Bauhinia). The fleet is the same as the one operating during daytime. The lower deck is for vehicles while the upper deck can pick up passengers during the ferry tour. Usually starting from 5:30 (with 2 to 3 ferries) and offering buffet services.
New World First Ferry	<ul style="list-style-type: none"> • It operates licensed ferry service with a licensing period of 10-year tender (approved by Transport Department). • There are 21 ferries in total. • The ferry routes serve inner harbour, outlying islands and remote areas. • There is rental service for ferries (i.e. night tour and burial at sea) as its side business. • Using fare to subsidise the weekday operation to maintain box revenue)
Star Ferry	<ul style="list-style-type: none"> • There are two cross-harbour ferry routes – (i) Tsim Sha Tsui–Central (4 ferries) and (ii) Tsim Sha Tsui–Wan Chai (3 ferries). • There is one idling ferry. • The operator also operates ferry tours as side business (i.e. inner harbour and outlying island tours). • The approximate proportion of income is 50% fare, 40% rent and 10% advertisement.

Tsui Wah Ferry	<ul style="list-style-type: none"> • There are 5 kaito ferry routes and 2 ferry routes. • The side business includes group ferries renting (tourism) and fast ferries for transport (i.e. picking up staff working at the sea – 3rd runaway project of HKIA). • Part of the income supplemented by the local ferry tours.
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There are some common strengths across the current ferry operators in Hong Kong:

- (i) No/Few immediate/short-term competitors because of the high capital investment required (i.e. vessels);
- (ii) Able to utilise the current vessels efficiently; and
- (iii) Using local ferry tours and ferry rental as a strategy to supplement income

Some specific strengths are also indicated by the local ferry operators:

- Star Ferry has an iconic image with a long history that can attract significant number of tourists. Low fare and relatively high frequency are also the cutting edge.
- Most operators have obtained experienced labour with over 30 years of experience.
- Some ferry operators make use of a flexible employment structure (i.e. employing part-time labour for holiday peak service).
- Some ferry operators reduce the costs of business by standardising fleet and outsourcing maintenance service.

Similarly, there are some challenges across the current ferry operators in Hong Kong:

- (i) A continuous decline of demand for ferry transport (both passengers and vehicles)
- (ii) Shortage of labour (average age of staff is relatively high)
- (iii) Depreciation of equipment
- (iv) Fluctuations of oil price
- (v) Insufficient pier infrastructure for berthing and maintenance

Specific challenges are also indicated by the local ferry operators:

- Urban ferry routes are hard to compete with other public transport modes.
- Fare income usually relies heavily on leisure and tourist travel (especially for island routes).

Summarising from the structured interviews, there are several fundamental challenges of operating ferry service as a business in Hong Kong. Table 15 shows the details. These challenges mainly evolve around six aspects, namely (i) **multimodal competition**, (ii) **far away from major activity nodes**, (iii) **labour shortage**, (iv) **old and outdated pier infrastructure**, (v) **financial instability** and (vi) **lack of long-term vision and commitment for ferry development**. More elaborations are listed below:

- Strong competition from other more efficient public transport (i.e. MTR and bus rapid transit) has discouraged ferry transport.
- Poor connection to public transit locations has made ferry transport “isolated” from the public transport network.
- Piers are detached from the major activity nodes.
- Few people from the younger generation are willing to work in the ferry industry and human capital investment is costly and time consuming.
- There is insufficient pier infrastructure for berthing and maintenance. Existing infrastructure is somehow outdated and cannot accommodate growing demand and more advanced vessel types.
- Fluctuations of oil price and increasing operational costs are posing tremendous financial pressure on operations and long-term investment.
- There is a lack of initiatives to position ferry as an important public transport mode.

Table 15. Challenges of operating ferry services as a business in Hong Kong

Challenges	Details
Multimodal competition & poor connection to public transport	<ul style="list-style-type: none"> • Development of rail infrastructure and extension of lines • Bus routes disconnected from the ferry piers • Walkability between MTR station and piers are not ideal • Hard to compete with other transport in terms of frequency, especially for urban ferry routes • Lack of public transport connection – weather will affect the walking connection to and from the MTR station
Far away from major activity nodes	<ul style="list-style-type: none"> • Relocation of ferry piers after reclamation increase the distance from the pier to the city centre • Relocation of piers make the piers far away from the catchment area, which should be close to the residential and employment opportunities
Labour shortage	<ul style="list-style-type: none"> • Shortage of labour (4-5 years to train a captain) • Average labour age is high • Training a qualified captain by Marine Department takes a relative long time (with license – 4.5 years, with experience – 6 years)
Old and outdated pier infrastructure	<ul style="list-style-type: none"> • Fewer harbours and berthing facilities in the inner harbour: Kowloon from 9 piers to 5 piers; Hong Kong Island from 8 piers to 3 piers). • The pier infrastructure was developed based on the design in 1960s, whereas the development after 2000s cannot match the pier development (e.g. lift and ramp limitations that hinder the operation of modernised ferries). • For some outlying pier (e.g. Cheung Chau), the existing facilities and capacity are already saturated – only one level in the pier where waiting area cannot accommodate over 700 people. • Maintenance facilities along the coastline is insufficient. • For some operators, there are not insufficient piers. There are no fixed locations of piers and can only search for public piers (competition in the use of piers). • Design of piers at the outlying islands is not practical (i.e. waiting environment not ideal – no electricity, no lamppost, no water supply (which is important for cooling down engines); landing steps too narrow and not accessible by physically-disabled
Financial viability	<ul style="list-style-type: none"> • Pier infrastructure depreciates and there are numerous limitations of making use of the piers • Increasing operational costs in labour and fuel • Increasing cost (e.g. capital cost reach 70 million for a ferry that carries 400-450 people and speed of 24-25 sea miles)
Lack of a strategic position	<ul style="list-style-type: none"> • No clear policy planning (i.e. from CTS1 to CTS3 ferry only acts as a supplementary role) • Lack of long-term planning of ferry development from the government

In response to the common challenges, the **ferry operators** have devised some solutions to alleviate the negative impacts associated with these challenges. Table 16 exemplifies on some strategies adopted by current ferry operators. Major highlights of some common strategies are indicated as below:

- Cooperating with relevant educational and vocational centres for attracting employment from the younger generations (to tackle labour shortage)
- Diversifying business portfolios to increase income sources (i.e. advertisement, rental income, local tourism)
- Reducing operational costs (i.e., use of renewable power resources)
- Deploying existing resources more efficiently (i.e. standardisation and outsourcing)
- Providing more frequencies when there is major breakdown of traffic in the road public transport system

Table 16. Strategies adopted by ferry operators to address the challenges

Challenges	Strategies
Increasing oil price	<ul style="list-style-type: none"> • No direct measures can be implemented – asking for fare increase through submission to the Transport Department
Labour shortage	<ul style="list-style-type: none"> • Cooperating with Hong Kong Sea School (i.e. internship programme) and Maritime Service Training Institute (MTSI) for employment • Cooperating with Maritime and Aviation Training Fund (MATF) that offer “sandwich” programmes with training and learning • Cooperating with TVC (i.e. having job fairs for the S6 graduates; targeting at the next generation of the existing staff and fishermen, encouraging middle-aged applicants to apply) • Deploying resources more efficiently
Financial viability	<ul style="list-style-type: none"> • Increasing other income sources from non-fare revenue from rent and advertisements
High running cost	<ul style="list-style-type: none"> • Improving the existing services to reduce operational costs (i.e. using solar energy at the roof-top and the excess energy can be sold to China Light and Power (CLP); more ventilation) • Increasing non-fare box revenue (e.g. event and advertisements)
Decrease in ferry patronage	<ul style="list-style-type: none"> • Increasing the frequency of ferry routes (i.e. the cross-harbour service) when there is breakdown in major road transport network
Insufficient piers	<ul style="list-style-type: none"> • Hard to solve the problem as there is ongoing competition in using the public piers during the holidays (especially Cheung Chau Public Pier)

In response to the fundamental challenges, the **government** can play a more significant role in supporting ferry development. These policies and measures are listed in Table 17. Major highlights are indicated below:

- Re-establish the role of ferry in the hierarchy of public transport system through a long-term planning approach (i.e. integrating ferry transport in the comprehensive transport strategies);
- Spearhead promenade development that favours residential and commercial development around the piers;
- Develop a mixed land-use setting with a wide range of commercial and recreational opportunities in major accessible piers (i.e. ferry hubs) as ferry cannot independently survive without coordinating with other land uses;
- Improve the experience for the whole journey (including multimodal transfer and walking)
- Invest in training of human resources; and
- Stabilise oil price through a well-established mechanism.

Table 17. Effective forms of government support to ensure the long-term sustainability of ferry services in Hong Kong (apart from fare subsidies)

Support	Details
Attracting patronage	
(i) Densifying and diversifying land uses	<ul style="list-style-type: none"> • Increase the diversity of land uses to enhance the demand for ferry services (i.e. commercial areas, residential area and hotels). • Pier development should be integrated with other land uses (especially commercial and residential activities). • Relocate and develop the maintenance facilities in the coastal area (i.e. maintenance facilities are important).
(ii) Enhancing the walking experience	<ul style="list-style-type: none"> • Improve the walking infrastructure (i.e. travellers) • Enhance the standard of walking environment connecting to the piers (i.e. covered pathways which can reduce the impacts of weather) • Improve the information of ferry services (i.e. timetable and suitable signage at nearby streets and public piers)
(iii) Improving connectivity to public transport	<ul style="list-style-type: none"> • Facilitate the interchange between ferry and other modes of transport in particular bus and minibus. • Put b public transit interchange right next to the pier. • Use advanced technology (i.e. automated vehicles) to connect to piers • Reroute buses and minibuses to enhance the service hinterland
(iv) Holding more events along the promenade	<ul style="list-style-type: none"> • Integrate ferry transport to promenade development (i.e. large-scale events along the promenade) • Promote different ferry routes in Hong Kong (especially for cross-harbour ferry routes) • Advertise local tourism: especially advertisement to local residents about other outlying islands and rural areas
Investment and reducing financial burden	
(i) Improving pier infrastructure	<ul style="list-style-type: none"> • Allow ferry operators to put necessary facilities (i.e. information board) at the public piers • Constructing more piers for berthing (some piers are with insufficient spaces during peak service)

(ii) Investing in human resources	<ul style="list-style-type: none"> • Support captain training (i.e. lack of education and high investment that can go up to 3 million for training 1 captain) • Increase the training for maintenance staff • Design certified courses for the ferry industry: diploma or professional certificate for courses in training captains (i.e. equal to the minimum passing level of DSE)
(iii) Stabilising oil price and increase autonomy for other income sources	<ul style="list-style-type: none"> • Stabilising the fluctuation of oil price • Establish a mechanism to stabilise oil price, as it is a high-risk investment (i.e. if the price is higher than that in the deal, the government can provide subsidy) • Allow ferry operators to enhance the non-ferry box revenue (i.e. property lease, advertisement and event-based operation)

The last part of the interview was about the opinions towards potential new ferry routes and the potential development of water taxis. Summarising from current ferry operators, there are several non-existing piers and ferry routes with potentials:

- **Potential new piers:** West Kowloon Cultural District, Tsim Sha Tsui East, Kwun Tong, Sai Wan, Central, Wan Chai (near Golden Bauhinia Square), Causeway Bay (near shelter), North Point and Sai Wan Ho
- **Potential new routes:** Hung Hom–Central; Lantau Island routes (under the East Lantau Development Plan)

However, most ferry operators expressed clear concerns to be addressed before the potentials can be realized. They include:

- Fixed capital investment for vessels is huge, especially if the ferry service needs to be maintained at a specified frequency throughout daytime (i.e. both peak and off-peak hours).
- Most of the piers are isolated from other land uses. There is also not enough population intake nor supporting infrastructure near the piers.
- Improving railway network in Hong Kong will continuously put pressure on the long-term development of ferry services, leading to decreasing incentives for operation (i.e. Sha Tin–Central Link).
- Without clear government support and investment near the piers, it is not attractive for ferry operators to invest in new routes.

For water taxi development, the current ferry operators saw two distinctive opportunities:

- Water taxis are suitable for serving tourism and entertainment purposes. New market segments can be created.

- Water taxis can connect areas that are not well-linked to other public transport modes but are already having new developments (e.g. West Kowloon and Kai Tak).

However, there are multiple concerns towards water taxi development:

- Water taxis are theoretically feasible but the safety regulations, speed limit, fuels and the overall hardware regulations need to be clearly specified.
- The connection from the landing step to the inland areas or public transit interchange is mostly not well-developed at this stage.
- There is insufficient infrastructure to support water taxi development including the supply of energy and possible locations for landing.
- The environmental standards of fleet need to be well regulated, as busy water traffic at the Victoria Harbour can be polluting.

Next, Figure 39 presents the overall trend in the number of complaints about the ferry services between 2000 and 2018. The complaints declined steadily between 2000 and 2010 with some slight fluctuations. However, there is a significant growth of complaints from 2012 to 2014. A closer look at the complaints suggests that the major factor associated with the “spike” was largely be related to the fare increase by 4.8 to 6.4 percent in the major outlying island routes. Other major concerns were mainly about frequency, hygiene and pier facilities. Again, more effective measures need to be devised to improve the overall ferry experience while maintaining ferry fare at an acceptable range.

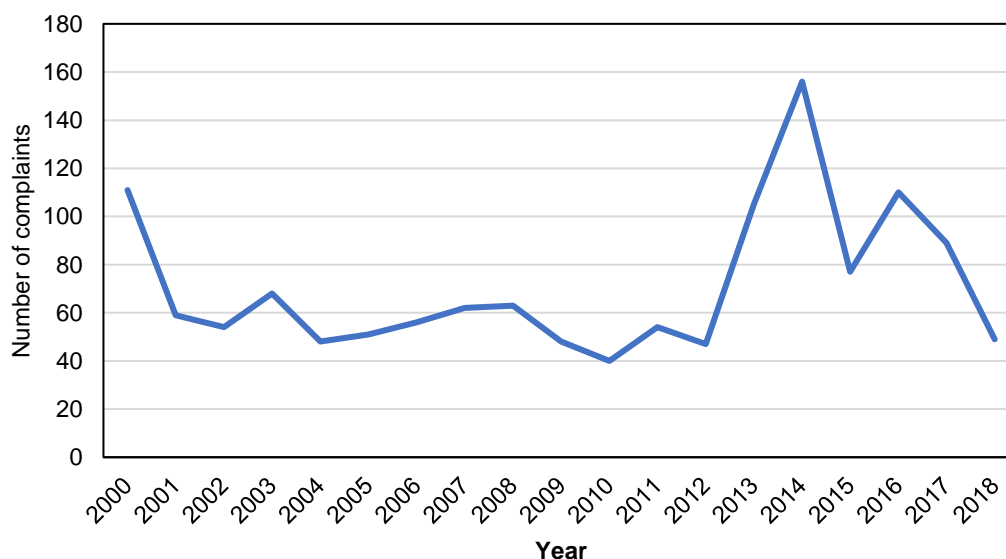


Figure 39. Number of complaints about ferry services received by the Transport Complaints Unit of the Transport Advisory Committee

4.4 International case studies of ferry development

In this section, we selected three relatively successful cases of ferry development from international cities with reasonably heavy waterborne passenger traffic, namely Brisbane, New York City and San Francisco. In this exercise, we choose to focus on analysing aspects related to the (i) operator(s), (ii) types and routes of ferry services, (iii) performance in patronage and satisfaction (iv) size and types of vessels, (v) financial performance and (vi) pier management. A summary for each case study is presented in a table format for easy reference. Table 18 is on Brisbane, Australia. Table 19 is on New York City, USA. Table 20 is on San Francisco, USA.

4.4.1 Brisbane, Australia

Brisbane City Council has promoted ferry development in the past two decades. Transdev Brisbane Ferries is a contracted operator to run the ferry services of CityCats, CityHoppers and CityFerries (including urban linear and cross-river routes). Figure 40 provides a route map of the Brisbane ferry network. Table 18 provides the basic information of ferry business of Transdev Brisbane Ferries. Overall, there is a steady growth of ferry patronage in Brisbane. Brisbane City Council has a **strong role** in spearheading ferry development. There is significant capital investment in fleet and upgrades of existing pier infrastructure. In 2017-2018, the City Council invested over 12 million in ferry terminal upgrades. There is also ongoing investment in compliant bus stops and ferry terminals and the purchase of new vessels for CityCat service (Brisbane City Council, 2018).

There are several overarching objectives developed by the Brisbane City Council (2017), which primarily highlights that ferry development needs to be integrated in a **holistic planning** for an accessible river network.

- **River Access Hubs** are established as a focus for river access activities.
- A network approach is implemented to planning for river infrastructure.
- Council works with other parties who are delivering river access infrastructure.
- New river access sites fill gaps in the network.
- Supporting projects facilitate the optimal use of the river access network.

The concept of “river access hubs” pinpoints the strategy of making the river accessible to the public by a well-established ferry transport network and encourages the development of further investment in other river activities (i.e. recreation).

The **ferry operator** is also responsive to the demand and user expectations (Transdev, 2018), which include the initiatives of:

- Collaboration with all city mobility stakeholders to ensure an integrated set of services, in particular during major cultural and city events
- Working with local public transportation regulator, TransLink, to ensure integration with ticketing and passenger information systems.
- Extensive maintenance facilities and a highly skilled workforce to keep vessels well maintained, safe, efficient and available for operation.
- Over the last 2 years a program of vessel re-life works has been undertaken on the original City cat fleet and continues today to breathe new and extended life into the city's valuable transportation assets.
- Commitment to growth with the introduction of new terminals and vessels.
- Transdev Safety Drills recognized by regulatory authority as best practice.

Table 18. The case study of ferry development in Brisbane, Australia

Operator	Transdev Brisbane Ferries
Types of business	Contract
Operated ferry service	
Routes operated	Mainly urban routes (a total of 5 routes)
Total route length	22 km
Operation frequency	15 – 30 minutes; everyday
Operation hours	0518 – 0032
Performance in patronage and satisfaction	
Daily patronage	13,500
<i>5-year change</i>	<i>+11%</i>
Average satisfaction	79.7 / 100
<i>5-year change</i>	<i>+3.5%</i>
Mode share	2.7%
Vessels	
Number of vessels	30 (owned by Brisbane Council)
Types of vessels	21 CityCats, 9 CityFerry and CityHoppers
Carrying capacity	3,900
Financial performance	
Operational subsidies	AUD \$7.09 per passenger
<i>3-year change</i>	<i>+14%</i>
Cost-revenue ratio	2.70
Diversity of business	Operating bus service in Brisbane
Pier management	
Ownership	Public owned by Brisbane City Council
Government upgrades	Ferry terminal upgrades of 12 million by Brisbane City Council (2017-2018)

Source: Transdev (2018); Department of Transport and Main Roads (2013-2018); Brisbane City Council (2018); Brisbane City Council (2016)

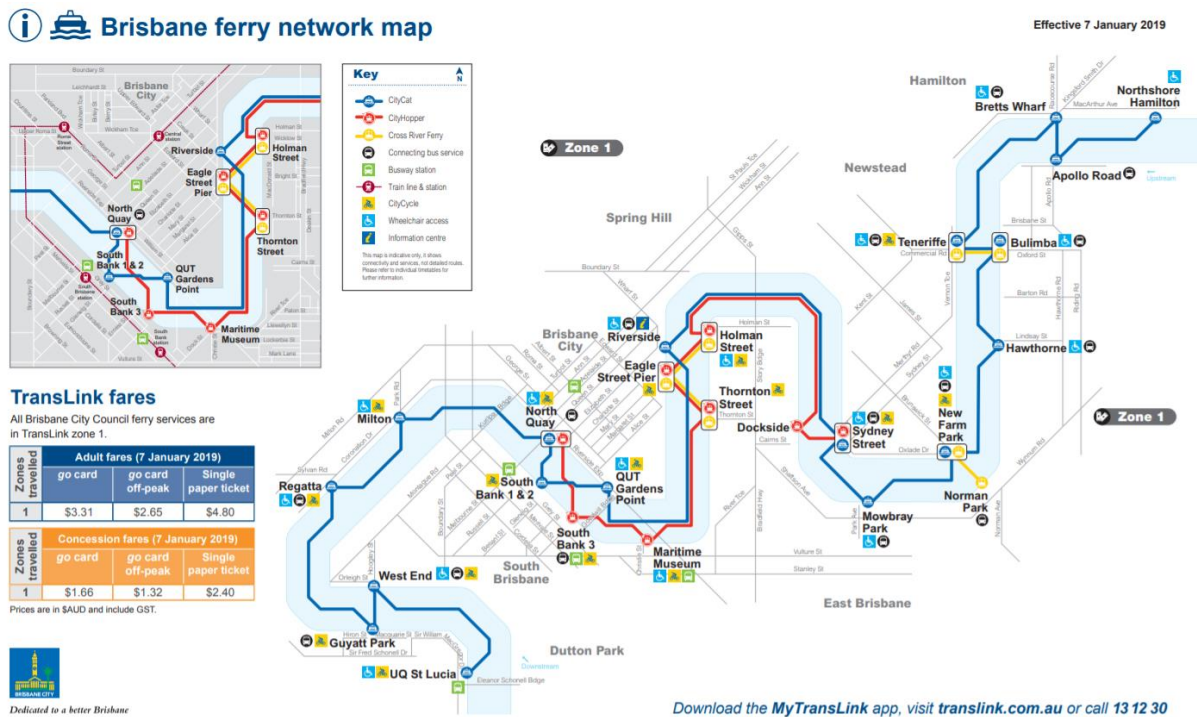


Figure 40. Ferry routes of Transdev Brisbane Ferries in Brisbane, Australia

Source:

<https://translink.com.au/sites/default/files/assets/resources/plan-your-journey/maps/190107-ferry-network-map.pdf>

4.4.2 New York, USA

New York City Ferry is supported by New York City Economic Development Corporation (NYCEDC) in recent years. In their White Papers published in 2013 (NYCEDC, 2013a; 2013c), it is stated that ferry transport has a **strong position** in filling transit gaps, relieving traffic congestion, improving people's quality of life and promoting attractive routes (i.e. more convenient routing). Federal grants are injected for supporting capital investment. In the recent Ferry Expansion Feasibility Study (NYCEDC, 2018), there are three clearly defined objectives for ferry development:

- Provide **affordable and convenient transit** for communities, improving overall transportation options;
- Support growing **neighbourhoods** and connect people to **jobs and economic opportunities** throughout the city; and
- Increase the **resiliency and redundancy** of the city's transportation network.

In the first phase, the City is investing \$55 million in upgrading the pier infrastructure (e.g. building 10 new ferry landings and rehabilitating the other six piers) (The City of New York, 2016). In the upcoming years, there is a drafted proposal for expanding the ferry services in New York. The city will invest \$100 million in capital to procure new boats, build new landings, and

invest in existing landings (State of the City, 2019). A huge sum of ferry subsidies was provided to subsidise passengers per trip (i.e. USD 10.73 per passenger). To enhance the ferry transfer experience, free connecting bus services are provided to connect the pier to the major downtown areas. Figure 41 illustrates the service route map of NYC Ferry.

Table 19. The case study of ferry development in New York, USA

Operator	New York City Ferry by Hornblower
Types of business	Contract
Operated ferry service	
Routes operated	Mainly urban routes (a total of 6 routes)
Total route length	111 km
Operation frequency	20 – 90 minutes; everyday
Operation hours	0615 – 2238
Performance in patronage and satisfaction	
Daily patronage	12,000
<i>5-year change</i>	<i>+51%</i>
Average satisfaction	71 / 100
<i>5-year change</i>	-
Mode share	0.2%
Vessels	
Number of vessels	24 (Owned by NYCEDC)
Types of vessels	Aluminium catamarans
Carrying capacity	3,000
Financial performance	
Operational subsidies	USD 10.73 per passenger
<i>3-year change</i>	-
Cost-revenue ratio	4.18
Diversity of business	Ferries for rent, dining cruises & sight-seeing tours (i.e. hop-on & hop-off trips)
Pier management	
Ownership	Mostly public owned by city government and NYCEDC
Government upgrades	Ferry terminal reconstruction of over 36 million by city, federal and state sources (2018)

Source: NYC Ferry (2018); NYC Department of Transportation (2019); NYC Ferry (2017); NYCEDC (2017); CBC (2019)

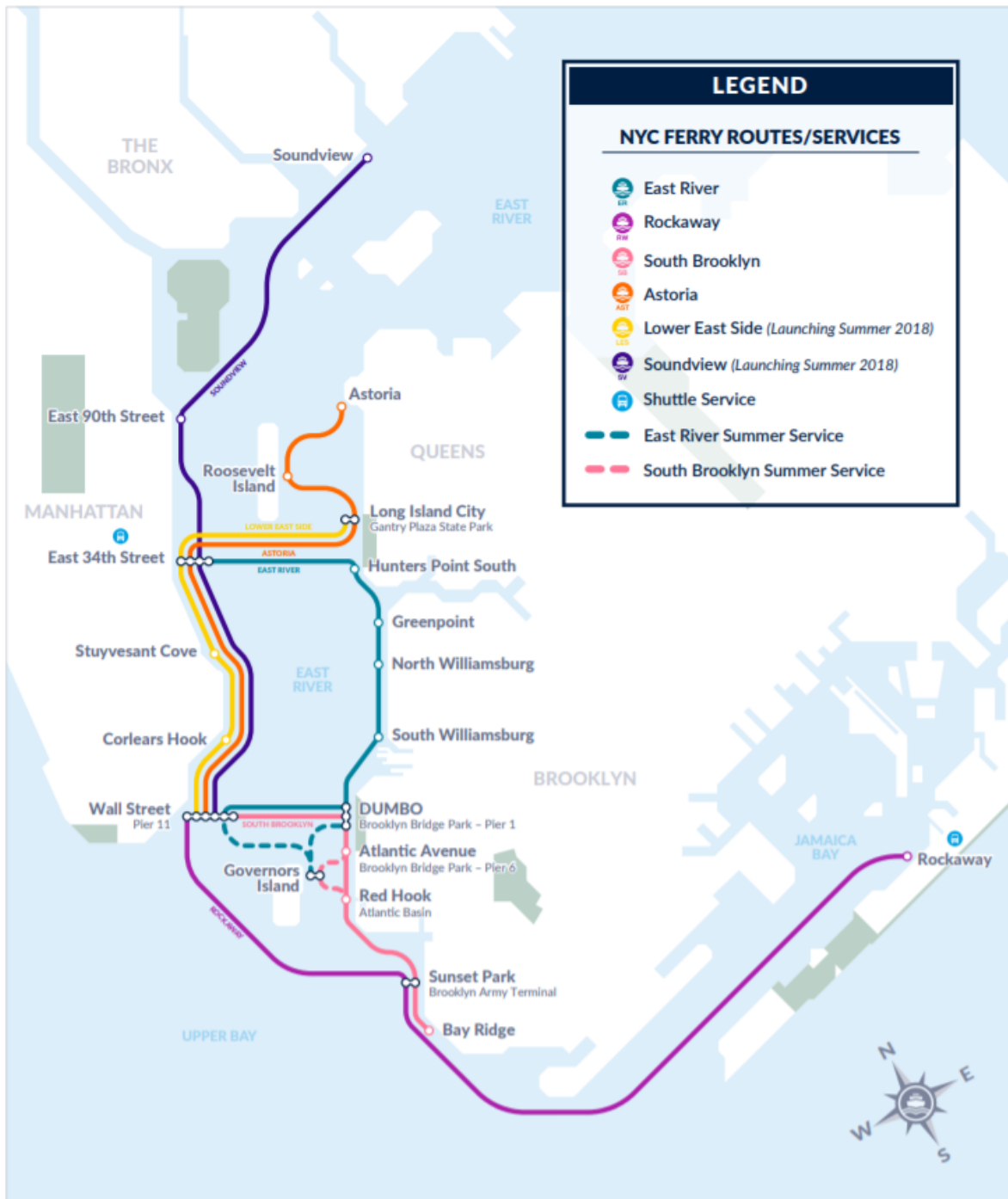


Figure 41. Ferry routes of NYC Ferry in New York, USA

Source: <https://www.ferry.nyc/routes-and-schedules/current-map/>

4.4.3 San Francisco, USA

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) has been **actively promoting** ferry development in San Francisco City. The vision of WETA in shaping the ferry development in the city is “(to) develop, operate and manage an expanded and enhanced region-wide ferry system that provides a reliable, state-of-the-art and attractive transportation option for the Bay Area and plays a critical role in coordinating and providing water

transportation to serve emergency response and economic recovery needs” (WETA, 2016a, pp.4). The emphasis is providing an **attractive alternative** for travel which can also **stimulate economic development**. The formulated strategic plan includes seven core components, which include (i) Expanded Service, (ii) Funding, (iii) Quality, (iv) Partnerships, (v) Environmental Stewardship, (vi) Emergency Response and (vii) Organizational Capacity and Leadership. The existing funding consists of 80 percent from the federal formula grant by Metropolitan Transportation Commission (MTC) and 20 percent from local match provided by WETA. In particular, the strategy highlights that funding should not only be contributed towards new vessels and pier infrastructure upgrades, but also the **supportive access infrastructure** (i.e. walkways, cycling and parking facilities). Non-motorised access is highly supported. Figure 42 illustrates the ferry service routes of San Francisco Bay City Ferry.

Table 20. The case study of ferry development in San Francisco, USA

Operator	The Blue and Gold fleet
Types of business	Contract
Operated ferry service	
Routes operated	Mainly urban routes (a total of 5 routes)
Total route length	117 km
Operation frequency	30 – 90 minutes; everyday
Operation hours	0520 – 2215
Relative performance	
Daily patronage	7,800
<i>5-year change</i>	<i>+43.7%</i>
Average satisfaction	3.8/5
<i>5-year change</i>	<i>-4.7%</i>
Mode share	1%
Vessels	
Number of vessels	12 (owned by WETA)
Types of vessels	11 double-deck and 1 triple-deck
Carrying capacity	4,300
Financial performance	
Operational subsidies	USD 5.89 per passenger
<i>3-year change</i>	<i>-30.8%</i>
Cost-revenue ratio	1.91
Diversity of business	Ferries for rent & sight-seeing tours (i.e. one-day and night tours)
Pier management	
Ownership	Public owned by city government and WETA
Government upgrades	Ferry terminals infrastructure of 179 million committed funding by WETA

Source: WETA (2018a); SFMTA (2019); WETA (2014); WETA (2018b); WETA (2016b)



Figure 42. Ferry routes of San Francisco Bay Ferry in San Francisco, USA

Source: <https://sanfranciscobayferry.com/>

4.4.4 Key Lessons Learnt

From the above international case studies, several key lessons can be learnt from the ferry operators and the municipal governments. For ferry operators, a common strategy is to increase the service hinterland of ferry routes. Usually, the major ferry service would call stops at piers near major employment centres and commercial opportunities. These piers are usually well-established ferry terminals where **multiple ferry routes** call/terminate. In other words, piers are not used exclusively for one ferry route. Moreover, these terminals provide ferry routes connecting mostly to other dense areas, suburbs and island regions. Another common feature for these ferry routes is that they composed of urban linear and cross river/harbour services that usually call multiple stops. A number of these ferry routes are in mixed operation modes, which call multiple stops at both sides of the river/harbour (e.g. linking multiple stops on the same side before crossing the river). The arrangement helps to capture a larger service hinterland. Another common strategy is to enhance the **convenience** of ferry services. The major measures include maintaining high frequency at peak hours, using smart ticketing techniques (i.e. a prepaid system) and integrating water transport into the public transport network. Bus transit is usually right next to the ferry terminal which offer a seamless transfer experience.

The government's role in pier management of the three cities also provides insights on successful ferry development. Basically, the government will take up the responsibility in routine maintenance, pier upgrades, and long-term capital investment of piers. There are several core

elements. First, the government has continued to upgrade the pier infrastructure including gangways, piling and pontoons to enhance the safety of passengers. Also, they have improved the accessibility to other transport connections by improving non-motorised access (i.e. pedestrian and cycling network linking the promenade, major activity locations and public transit locations). Third, they have improved the waiting areas by integrating shopping opportunities, enhancing the landscape, and providing seats and shelter. To increase the visibility and travel information of ferry routes, they have also provided signage and wayfinding boards near the piers and at major activity locations. Finally, they have increased the activities near the piers, such as promoting mixed land-use development and integrating a wide range of recreational and leisure opportunities.

CHAPTER 5 POLICY IMPLICATIONS AND RECOMMENDATIONS

5.1 Densifying and diversifying land uses near piers

The results from this study, including surveys from passengers, interviews from ferry operators and the international case studies, suggests that areas of denser and more diversified land uses are essential to support ferry patronage especially in highly accessible piers. Empirical evidence from other international cities suggests that these are usually piers near the CBD and downtowns that are featured by mixed land uses (i.e. commercial, shopping and recreational). If properly developed, these piers can have potentials to become a water transit hub, which helps to integrate the ferry network into the road transport system. Ferry-ferry transfer can also be promoted. In Hong Kong, Central, Tsim Sha Tsui, Kwun Tong and North Point are of significant potentials if more activity opportunities are provided surrounding these piers. Again, pure residential land use around the piers may not be enticing enough to attract ferry ridership, unless these ferry routes can connect to highly accessible areas or with proximity to key public interchanges (offering advantages in shorter travel time). Therefore, to strengthen the role of ferry in the hierarchy of public transport, it needs to integrate land-use planning into a comprehensive plan for **promenade development**. Reducing the distance between opportunities and the piers by sensibly increasing the density of working and shopping opportunities are conducive. It can affect the whole travel experience, in particular “convenience”, to and from the activity locations. Large-scale events along promenade should also be promoted on a regular basis. The international experience suggests that these opportunities may not require major shopping malls, but regular flea markets can attract significant patronage.

5.2 Enhancing connectivity with public transport and activity nodes

This study illustrates that the connectivity to activity nodes is of utmost importance to ferry ridership. Again, as suggested in our survey, over 70 percent of frequent ferry passengers walked to/from the origins and destinations directly. Hence, making the walking experience to and from piers more convenient, comfortable and safer is paramount and can significantly enhance the pleasantness during the walking trip. In practice, increasing pedestrian network connectivity, providing covered shelters along major routes to activity nodes, and providing direct non-motorised access are beneficial. Another important finding is that ferry has strong potentials in being a supplementary transport mode for multimodal transfer. Our study suggests that the availability of bus interchange near piers is positively associated with ferry ridership. Moreover, enhancing the connectivity to public transport locations and walkability around the piers are identified as the most important factors that can enhance the willingness of ferry travel by non-frequent ferry travellers. Some successful experience from other cities indicates that convenient bus transfers (i.e. seamless transfer) is critical to sustain ferry patronage. Nonetheless, the

routing of buses needs to be rationalised so that competing routes can be eliminated, and potential hinterland can be enlarged. Currently, information about ferry-bus transfer or ferry-rail transfer might not be well disseminated. In our survey, some respondents did not have a clear idea on the fastest route between the piers and their desired locations, nor the locations of the public interchange.

5.3 Identifying and paying attention to the “weak spots” of ferry journeys

Apart from fare, the frequency of ferry service is a major concern. Frequency is indeed the most valued parameter for most commuter routes, as the ferry service needs to be frequent enough and are able to reduce travel time when compared to other transport modes. Most of the routes that connect to the CBD are **mixed commuter-tourist routes**. Therefore, optimising ferry frequency and operational hours in peak hours and non-peak hours, weekdays and weekends are critical. Apart from frequency, our study finds that improving the existing infrastructure to enhance the **experience of waiting at the piers** is essential. To summarise, the provision of adequate toilets, more seats in the waiting area, larger waiting space, and provision of complementary Wi-Fi in ferry piers can enhance the satisfaction especially for island routes which usually have a moderate level of frequency. Also, some non-frequent ferry travellers are not familiar with the timetable. As a result, they feel that ferry is much slower and require longer waiting time than other transport modes. A better dissemination of ferry timetable and schedule is important.

5.4 Making the “ferry experience” pleasant and special

Ferry operators can adopt different kinds of strategies to attract potential passengers. While around 35 percent of the respondents suggested comfort and being able to enjoy the sea view are important factors of travelling by ferry, there are significant potentials to attract more passengers in offering a **more unique experience** than other public transport. As suggested in this study, a significant proportion of non-frequent passengers indicate that more serious road congestion, a higher level of crowding and increasing fare of other transport modes can lead to a higher willingness to travel by ferry. Making ferry travel a convenient service through making the timetable and frequency clear to public (i.e. real time information in the app) and providing walking routes and approximate walking time information in advance of the trip can make the passengers more familiar with the travel time.

5.5 Promoting the electrification of ferry vessels

To further enhance the environmental sustainability of ferry transport in Hong Kong, policy initiatives to support the electrification of ferry vessels can be considered. Recently, the government has announced to replace the entire fleets of 11 ferry routes and introduce greener

vessels. In reference to the electric ferry development in Europe and the U.S., there are several policy recommendations in both the vessels and charging infrastructure. First, some light-weight solutions need to be considered in the purchase of new ferries because the weight of batteries can decrease the overall energy efficiency. Installing an electric propulsion system in current ferries may not be feasible given the outdated hardware and difficulties in retrofitting. Second, charging infrastructure that allows fast and over-night charging needs to be developed at the major piers. High-frequency inner harbour ferry routes (such as Star Ferry) have a very short berthing period at the piers. This may pose operational challenges (i.e. schedules) even when fast charging is available. Essentially, potential electricity demand from the existing electricity grid needs to be evaluated (especially at piers of multiple routes – Central, Tsim Sha Tsui and North Point). On the other hand, the outlying island routes may require ferries of a hybrid propulsion model due to its longer travel distance. The very recent development of a long-range battery can be up to around 38 kilometres, but a round-trip to Cheung Chau is already over 40 kilometres.

5.6 Strengthening the role of government in long-term ferry development

The government needs to have a clear vision and long-term strategies to promote ferry development in Hong Kong. Currently, there is no well-defined blueprint for **integrating ferry into the public transport system**. To make the ferry business financially viable and reduce the reliance on public subsidies, ferry needs to be repositioned as an important element in the public transport network. As indicated by the more successful cases in other international cities, the most effective strategy is to integrating ferry pier renovation / development project into a holistic plan for **promenade development**. This includes bringing activity opportunities near the piers, providing a diverse set of opportunities (including mixed locations for working, residential and recreation). The government initiatives in upgrading pier infrastructure, improving supporting infrastructure for non-motorised access (i.e. pedestrian network and cycling facilities), and the purchase of vessels are all important to support the viability of ferry business. The business models as illustrated in other cities have manifested the importance of government's role in **capital investment**. Long-term benefits can be substantial if pier infrastructure and connecting facilities are well-developed (as observed in some cities that operational subsidies per passenger has decreased steadily).

CHAPTER 6 CONCLUSIONS AND WAY FORWARD

6.1 Summary

This study explores the potential ways of re-establishing ferry as an important transport mode and putting ferry back to the hierarchy of public transport in Hong Kong. This study is developed following a multi-pronged approach that is structured in four major parts, including (i) population demand profiling, (ii) questionnaire surveys among ferry passengers, (iii) structured interviews with local ferry operators, and (iv) international case studies. Our study suggests that several factors are critical to the viability of ferry service, including (i) land-use planning (i.e. density and diversity) surrounding the pier and along the promenade, (ii) connectivity to activity locations and public transit locations from piers, (iii) service quality and the experience of the whole journey, (iv) the business models and associated management strategies and (v) the role of government in capital investment. These are key factors of ferry ridership and, hence, the long-term sustainability of ferry services.

6.2 Overview of relevant parties in delivering policy recommendations

The message is clear – promoting viable ferry services requires efforts not only within the ferry operators *per se*, but also multiple stakeholders including different government departments, advisory bodies, public transport operators, property developers and even the general public. Following the five major factors of ferry ridership identified in this study, the final section considers how different parties can help deliver the policy recommendations together. There is a need for the government (involving different Bureaux and Departments), government advisory bodies, the public transport industry and the general public to join hands. Table 21 provides an overview on the key stakeholders corresponding with the five policy recommendations.

Table 21. Key stakeholders corresponding to the five policy recommendations

Policy actors	Details
(i) Land use planning surrounding the piers	
Development Bureau	<ul style="list-style-type: none"> • Setting out a clear policy vision and targeted objectives for the promenade development • Positioning our promenade as an integrative hub for employment, commercial, recreational and residential opportunities alongside good public transport access • Increasing the density and diversity of land use near the piers is an important strategy
Transport & Housing Bureau Planning Department	<ul style="list-style-type: none"> • Integrating residential development into the long-term planning for ferry transport • Integrating ferry pier development in the overall harbourfront planning framework • Developing the outline development plan near piers in a place-specific approach • Integrating leisure activities, open space and sports near piers

- Identifying the major public piers that are usually with saturated capacity during holidays and major tourist attractions
- Integrating the perspectives from architects, landscape architects, engineers, real estate and business in suggesting land use planning strategies (i.e. coordination among land uses)

(ii) Connectivity to activity locations and public transit locations from piers

- Transport & Housing Bureau**
 - Exploring the feasibility of the ferry transit-oriented development (TOD) model
 - Formulating a holistic strategy for promoting a sustainable water passenger transport system in Hong Kong
- Transport Department**
 - Conducting microscale walkability studies onsite near the current piers (especially the inner harbour)
 - Analysing the pedestrians' walking behaviour such as major entrances and exits of the nearby buildings connecting to the piers, popular activity locations near the piers and pedestrian flow of major route sections (i.e. at-grade, bridge and tunnels)
 - Enhance the walkability (i.e. convenience, comfort and safety) between the pier and public transit locations.
- Harbourfront Commission**
 - Integrating ferry services as "accessible public transport" in the discussion of promenade development
 - Conducting field studies to investigate the current status of pedestrian connectivity and provide suggestions

(iii) Service quality and the experience of the whole journey

- Transport Department**
 - Monitoring the service quality of the ferry routes based on the feedback from the Transport Complain Units (TCU)
- Transport Advisory Committee**
 - Discussing the feasibility of re-routeing ferry service, promoting seamless multimodal transfer and ways of strengthening the business models (in particular supplemental income)
- Transport Complain Unit**
 - Analysing the nature of the complaints in particular relating to the service quality
 - Highlighting the priority improvement areas

(iv) Business models and associated management strategies

- Public transport sector**
 - Promoting ferry-bus, ferry-rail, ferry-minibus and even ferry-tram transfer
 - Developing wayfinding information boards should be placed near the major transit locations and highlight the estimated walking time
 - Provide attractive remuneration package and career development opportunities for people working in the ferry industry
- Transport Department**
 - Investigating into the potential demand for the suggested new ferry routes and feasibility of rerouting ferry services (calling multiple stops)
 - Improving the wayfinding system and ferry operation information, especially near ferry piers
- Transport Advisory Committee**
 - Gathering opinions from experts of different fields and suggesting a preliminary proposal on the long-term development of ferry transport
 - Discussing the feasibility of re-routeing ferry service, promoting seamless multimodal transfer and ways of strengthening the business models (in particular supplemental income)

(v) Pier management

- Development Bureau**
 - Fostering the coordination among different land uses and
 - Ensuring enough capital investment in pier and supporting infrastructure
- Planning Department**
 - Examining the possibility of a theme-based "water hub" offering a wide range of opportunities
- Civil Engineering and Development Department**
 - Improving the existing pier infrastructure, by enhancing the safety and carrying out small-scale expansion work
 - Upgrading the existing pedestrian infrastructure such as decreasing vehicular-pedestrian conflict near piers, provide easy access to bridge or tunnels, providing shelters in the major walkways
- Private property development**
 - Integrating the possibility of private property developed above or adjacent to the piers can be investigated

6.2.1 Government bureaus and departments

(a) Development Bureau (DEVB): Currently, the Harbour Office under DEVB helps streamline the initiatives of implementing enhancement initiatives along the two sides of the harbourfront. To fully address the challenges, DEVB needs to set out a clear policy vision and targeted objectives for the promenade development in Hong Kong. This should not only be limited to the harbourfront but also the coastal areas where the city's blue asset has not been fully utilised. There needs to be a blueprint for revitalising and fully utilising the coastal areas in various phases. The overarching vision can be to position the city's promenade as an integrative hub for employment, commercial, recreational and residential opportunities alongside good public transport access. Increasing the density and diversity of land use near the piers is an important strategy, provided that direct water transport access is developed to fully capture the opportunities. To promote viable ferry services, DEVB has a fundamental role in fostering the coordination among different land uses and ensuring enough capital investment in pier and supporting infrastructure. Developing an organisational structure of different policy actors is essential.

(b) Transport & Housing Bureau (THB): THB can consider integrating residential development into the long-term planning of ferry transport. Indeed, overseas experience suggests that ferry terminals can generate value capture for the nearby private properties and spill-overs for other economic activities. The feasibility of ferry-based transit-oriented development model can be explored. THB should also spearhead effort in formulating a holistic strategy for promoting a sustainable water passenger transport system in Hong Kong. Based on the major hubs of the sustainable water passenger transport system, THB can work with DEVB to identify potential areas (of mixed land use) for residential development near the current and potential pier locations. THB can also make reference to the several successful ferry TOD experiences from other cities, such as Brisbane and New York.

(c) Planning Department (PlanD): PlanD has a vital role in the overall planning and execution of policy instruments in developing our promenade. PlanD has been working on formulating the harbour planning framework (e.g. planning design and principles) and conducting various studies to refine the urban design for harbourfront development. One very important insight from this study is that PlanD can integrate ferry pier development in the overall waterfront planning framework. The potential opportunities for the ferry terminals to be integrated with the nearby diversified opportunities with good accessibility by water transport is under-investigated. Second, the outline zoning plans can be further fine-tuned following a place-specific approach.

Although some harbourfront piers are having higher commercial density, some overseas experience suggest that integrating employment and recreational opportunities, in particular leisure activities, open space and sports, can be more supportive to ferry patronage. A theme-based “water hub” offering a wide range of opportunities can be further examined.

(d) Civil Engineering and Development Department (CEDD): CEDD has been mainly responsible for the maintaining the marine facilities, carrying out the Pier Improvement Programmes and conducting several major construction projects along the waterfront. For short-term improvements, CEDD may first identify and target the major public piers that are operating near saturated capacity during holidays and major recreation/tourist attractions (e.g. hiking and camping) for improvements. Upgrading the existing pier infrastructure, by enhancing the safety and carrying out small-scale expansion work is essential. In particular for the waterfront, upgrading the nearby pedestrian infrastructure by providing shelters along the major walkways and reducing the number of vehicular-pedestrian conflicts near piers can be considered as priorities.

(e) Transport Department (TD): TD can identify the current accessibility issues at major piers so that improvement strategies can be devised. As suggested by our findings, connectivity of the pedestrian network is one key factor of ferry patronage. Some microscale studies need to be conducted onsite near the current piers (especially in the inner harbour). In particular, pedestrians’ travel behaviour such as popular entrances and exits of nearby buildings/public transport facilities connecting to the piers, popular activity locations near the piers, and pedestrian preferences (i.e. at-grade, bridge and tunnels) need to be further examined. In addition, TD should endeavour to enhance the walkability (i.e. convenience, comfort and safety) between the pier and public transit locations. TD also needs to monitor the service quality of the ferry routes closely based on the feedback from the Transport Complain Units (TCU). Also, TD can investigate into the potential demand for the suggested new ferry routes and the feasibility of re-routing ferry services (calling multiple stops). Furthermore, TD and **Highways Department (HD)** are responsible for the design, erection and maintenance of road signs in Hong Kong. One major issue for ferry transport to become more popular is insufficient knowledge in wayfinding to the nearby activity locations and public transit locations (in particular for non-frequent passengers). More wayfinding information boards showing the estimated walking time to nearby piers and the ferry schedule can be placed at/near the major roads and transit locations.

6.2.2 Government advisory boards

(a) Harbourfront Commission (HC): HC has a lot of professional expertise across a wide range of disciplines. Indeed, the background of non-official members highly corresponding to the two

policy recommendations in this study, including land use planning surrounding the pier and along the promenade (architects, landscape architects, engineers, real estate and business) and connectivity to activity locations and public transit locations from piers (planners, surveyors and urban design and transport). Meanwhile, the discussion on “accessible public transport” is not yet paying enough attention to the opportunities brought by direct ferry service and possible benefits brought by the investment in pier infrastructure. Apart from providing insights and advice to the government from their expertise, HC can have a fundamental role in the evaluation and monitoring mechanism. The different task forces may set up a clear timetable in reviewing current status, conducting field sites, and facilitating good communication with different government departments and beyond. Moreover, there can be some pilot areas for implementing the ferry-friendly initiatives. Some projects of public-private partnership can be advocated.

(b) Transport Advisory Committee (TAC): TAC has contributed to promote the viability of ferry service based on the government initiatives in helping ferry industry (i.e. Special Helping Measures) and the licensing terms. Similar to the Report on Study of Road Traffic Congestion, TAC can help gather opinions from experts of different fields to suggest a preliminary proposal on the long-term development of ferry transport in Hong Kong. Re-routeing of ferry service, promoting seamless multimodal transfer, and ways of strengthening the business models (in particular supplemental income) should be further investigated. The **TCU** under TAC can further analyse the nature of the complaints in particular relating to the service quality of different ferry routes so that the priority improvement areas can be identified. Some proactive theme-based questionnaire surveys can be conducted among ferry passengers, as the major concerns (not necessarily complaints) of using ferry services can be better understood.

6.2.3 Industry

(a) Public transport sector: As mentioned above, one major issue for ferry transport to become more popular is insufficient knowledge in wayfinding to the nearby activity locations and public transit locations (in particular for non-frequent passengers). Indeed, if the “convenience” of multimodal transfer, including ferry-bus, ferry-rail, ferry-minibus and even ferry-tram transfer, can be better promoted, there are significant opportunities in boosting ferry patronage. Putting up wayfinding information boards at/near the major transit locations requires cooperation from other public transport operators. In particular, bus routes that directly connect the piers to other major residential areas may make the multimodal transfer easier with better timetable or even real-time coordination. Also, the feasibility of having bus rapid transit service near piers during commuting hours can be investigated. To ferry operators and other public transport operators, there is a need to address the manpower issue in a concerted manner. A more in-depth study to enhance the attractiveness of the remuneration package and career development opportunities for

people working in the ferry industry (and other public transport sectors generally) is needed to ensure a steady supply of manpower in the diverse range of jobs from operations to management.

(b) Private property developers: There can be some pilot areas for implementing the public-private partnership. Possibility of private property developed above or adjacent to the piers can be investigated. Provision of public space along the promenade while developing private property is beneficial to both the residents and promenade users. Open access of these facilities would ensure that every citizen can enjoy the natural assets and may enhance our quality of life. For major developments near the waterfront, the provision of wayfinding information boards showing the estimated walking time to nearby piers and the ferry schedule can be considered.

6.2.4 General public

The general public, including frequent passengers, non-frequent passengers, and potential ferry passengers, can help deliver the policy recommendation by actively taking part in the public consultation. In particular, current ferry users can provide their suggestions on what types of activities can be integrated near the piers, suggestions on enhancing the walkability, and their major working and activity locations. This can significantly help the relevant authorities to conduct a better population demand profiling.

To conclude, promote viable ferry services requires concerted efforts from different stakeholders in the society. A vibrant promenade that offers a wide range of activities near the piers are fundamental to long-term ferry patronage. Ferry transport can play a far more significant role in facilitating the sustainable transport transition, in terms of enhancing the resilience of our transport network, increasing the intra-city movement, providing direct access to promenade, reducing carbon emissions, and enhancing quality of life. It is believed that more detailed research in analysing the different market segments of ferry passengers based on various socio-economic attributes, mobility patterns, and trip purpose can help inform better decisions by the ferry operators and government.

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APPENDIX

有關「重塑渡輪成爲香港可持續交通模式的重要地位」的問卷調查 Survey on Re-establishing Ferry's Key Position in the Sustainable Transport System of Hong Kong

第一部分 簡介 PART A INTRODUCTION

香港大學地理系盧佩瑩教授誠意邀請您參與本次研究調查。這是一項有關於「**重塑渡輪成爲香港可持續交通模式的重要地位**」的學術研究，旨在收集公眾對現時渡輪服務的評估及預測將來社會對渡輪的需求。您的回應將能提供寶貴資訊予研究人員分析現時渡輪服務的改善地方及制定一個香港渡輪可持續發展的政策。

I am Professor Becky P.Y. Loo from the Department of Geography at the University of Hong Kong. I will conduct a research project on “*Re-establishing Ferry's Key Position in the Sustainable Transport System of Hong Kong*” and would like to invite you to participate. This research aims at collecting information related to existing ferry services and estimating the potential demand for future services. Your response will provide valuable information in identifying the improvement areas of existing ferry services and developing a sustainable ferry policy in Hong Kong.

您需要完成一份約10分鐘的問卷。本研究所收集的資料只作研究用途，個人資料將絕對保密。是次研究不會收集個人識別資料的數據，並會以不記名方式進行。是次參與純屬自願性質，您可隨時終止參與是項行動，有關決定將不會引致任何不良後果。本次研究並不為閣下提供個人利益，但所搜集數據將對研究學習動機的問題提供寶貴資料。如日後你對是項研究有任何查詢，請與**盧佩瑩教授**聯絡（已刪除電話號碼）。如你想知道更多有關研究參與者的權益，請聯絡香港大學研究操守委員會（電話：2241-5267）。

You will only need to take part and answer questions in the survey, which only takes around 10 minutes. All information obtained will be used for research purposes only and will be remained strictly confidential. This questionnaire does not collect personal identifier information and is anonymous. Participation is entirely voluntary. This means that you can choose to stop at any time without negative consequences. There are no direct benefits, but your response can contribute to the future development of sustainable ferry in Hong Kong. If you have any questions about the research, please feel free to contact **Professor Becky P.Y. Loo (Tel. 3917-2835)**. If you want to know more about the rights as a research participant, please contact the Human Research Ethics Committee, the University of Hong Kong (2241-5267).

- 我明白上述研究程序並同意參與本次研究。
I understand the procedures outlined above and agree to participate in this study.

修訂日期：2018年8月8日
香港大學研究操守委員會確認限期：2022年4月9日
香港大學研究操守委員會參考編號：EA1802077

Date of Revision: Aug 8, 2018
HREC Approval Expiration date: April 9, 2022
HREC Reference Number: EA1802077

第二部分 乘坐渡輪行為
PART B FERRY TRAVEL BEHAVIOUR

1. 你多久會乘坐渡輪？（注意：來回乘坐渡輪當兩次計算）

How often do you travel by ferry? (Note: A two-way trip indicates 2 times of ferry travel.)

- | | | | |
|-----------------------|-----------|------------------------|---|
| <input type="radio"/> | 每日 3 次或以上 | 3 times or above a day | } |
| <input type="radio"/> | 每日 1-2 次 | 1-2 times a day | |
| <input type="radio"/> | 每星期 4-6 次 | 4-6 times a week | |
| <input type="radio"/> | 每星期 1-3 次 | 1-3 times a week | |
| <input type="radio"/> | 少於每星 1 期次 | Less than once a week | } |
| <input type="radio"/> | 少於每個月 1 次 | Less than once a month | |
| <input type="radio"/> | 從不乘坐渡輪 | Never | |

須回答問題2-15及20-26
Answer Questions 2-15
& 20-26 ONLY

須回答問題16-30
Answer Questions 16-30 ONLY

2. 你平均最少每星期 1 次乘坐以下哪條渡輪航線？請在所有適當位置打勾(✓)。

Which of the following ferry route(s) do you on average travel at least once a week? Please tick all the appropriate boxes.

港內線 Inner Harbour

- | | | |
|--------------------------|------------------|---------------------------------------|
| <input type="checkbox"/> | I1 尖沙咀 – 中環 | Tsim Sha Tsui – Central |
| <input type="checkbox"/> | I2 尖沙咀 – 灣仔 | Tsim Sha Tsui – Wanchai |
| <input type="checkbox"/> | I3 西灣河 – 三家村 | Sai Wan Ho – Sam Ka Tsuen |
| <input type="checkbox"/> | I4 西灣河 – 觀塘 | Sai Wan Ho – Kwun Tong |
| <input type="checkbox"/> | I5 北角 – 紅磡 | North Point – Hung Hom |
| <input type="checkbox"/> | I6 北角 – 九龍城 | North Point – Kowloon City |
| <input type="checkbox"/> | I7 北角 – 觀塘 (經啟德) | North Point – Kwun Tong (via Kai Tak) |

港外線 Outlying Islands

- | | | |
|--------------------------|------------------------|---|
| <input type="checkbox"/> | O1 中環 – 長洲 | Central – Cheung Chau |
| <input type="checkbox"/> | O2 中環 – 梅窩 | Central – Mui Wo |
| <input type="checkbox"/> | O3 中環 – 坪洲 | Central – Peng Chau |
| <input type="checkbox"/> | O4 中環 – 榕樹灣 | Central – Yung Shue Wan |
| <input type="checkbox"/> | O5 中環 – 索罟灣 | Central – Sok Kwu Wan |
| <input type="checkbox"/> | O6 中環 – 愉景灣 | Central – Discovery Bay |
| <input type="checkbox"/> | O7 中環 – 馬灣 | Central – Ma Wan |
| <input type="checkbox"/> | O8 香港仔 – 長洲 | Aberdeen – Cheung Chau |
| <input type="checkbox"/> | O9 香港仔 – 北角村 – 榕樹灣 | Aberdeen – Pak Kok Tsuen – Yung Shue Wan |
| <input type="checkbox"/> | O10 香港仔 – 索罟灣 (經模達) | Aberdeen – Sok Kwu Wan (via Mo Tat) |
| <input type="checkbox"/> | O11 愉景灣 – 梅窩 | Discovery Bay – Mui Wo |
| <input type="checkbox"/> | O12 馬灣 – 荃灣 | Ma Wan – Tsuen Wan |
| <input type="checkbox"/> | O13 北角 – 大廟灣 | North Point – Joss House Bay |
| <input type="checkbox"/> | O14 屯門 – 東涌 – 沙螺灣 – 大澳 | Tuen Mun – Tung Chung – Sha Lo Wan – Tai O |
| <input type="checkbox"/> | O15 坪洲 – 梅窩 – 芝麻灣 – 長洲 | Peng Chau – Mui Wo – Chi Ma Wan – Cheung Chau |

固定班次的街渡渡輪服務

- | | | |
|--------------------------|---------------------------|---|
| <input type="checkbox"/> | K1 香港仔 – 模達 | Aberdeen – Mo Tat |
| <input type="checkbox"/> | K2 香港仔 – 鴨脷洲 | Aberdeen – Ap Lei Chau |
| <input type="checkbox"/> | K3 香港仔 / 赤柱 – 蒲台島 | Aberdeen / Stanley – Po Toi Island |
| <input type="checkbox"/> | K4 東龍島 – 三家村 | Tung Lung Island – Sam Ka Tsuen |
| <input type="checkbox"/> | K5 東龍島 – 西灣河 | Tung Lung Island – Sai Wan Ho |
| <input type="checkbox"/> | K6 馬料水 – 東平洲 | Ma Liu Shui – Tung Ping Chau |
| <input type="checkbox"/> | K7 馬料水 – 塔門 | Ma Liu Shui – Tap Mun |
| <input type="checkbox"/> | K8 馬料水 – 荔枝窩 | Ma Liu Shui – Lai Chi Wo |
| <input type="checkbox"/> | K9 黃石碼頭 – 塔門 | Wong Shek Pier – Tap Mun |
| <input type="checkbox"/> | K10 黃石碼頭 – 三家村 (南風灣) / 赤徑 | Wong Shek Pier – Nam Fung Wan / Chek Keng |

- | | | | |
|--------------------------|-----|------------------|--|
| <input type="checkbox"/> | K11 | 沙頭角 – 鴨洲 / 吉澳 | Sha Tau Kok – Ap Chau / Kat O |
| <input type="checkbox"/> | K12 | 坪洲 / 聖母神樂院 – 愉景灣 | Peng Chau / Trappist Monastery – Discovery Bay |
| <input type="checkbox"/> | K13 | 長洲公眾碼頭 – 西灣 | Cheung Chau Public Pier – Sai Wan |
| <input type="checkbox"/> | K14 | 模達 – 索罟灣 | Mo Tat – Sok Kwu Wan |
| <input type="checkbox"/> | K15 | 西貢 – 伙頭墳洲 | Sai Kung – Fo Tau Fan Chau |

非固定班次的街渡渡輪服務

- N
- 由 From _____ 到 To _____
- (填上出發地點) (Fill in the origin) (填上到達地點) (Fill in the destination)
-

3. 現在回想最後一次乘坐渡輪。你乘坐了哪一條渡輪航線？

Please recall the last time of your trip by ferry. Which of the following ferry route did you travel?

由 From _____

到 To _____

(填上出發地點) (Fill in the origin)

(填上到達地點) (Fill in the destination)

根據問題3，回答問題4-10。

BASED ON THE ANSWER IN QUESTION 3, ANSWER QUESTIONS 4-10.

4. 該次渡輪行程是單程還是來回（一天內）？

Was the trip one-way or two-way (within a day)?

- 單程 One-way

(由 From _____

到 To _____)

- 來回 Two-way

5. 你平均每星期會乘坐該航線幾次？（注意：來回乘坐當兩次計算）

How often do you take this route on average per week? (Note: A two-way trip indicates 2 times of ferry travel.)

- 1-2
- 3-4
- 5-6
- 7-8
- 9-10
- >10

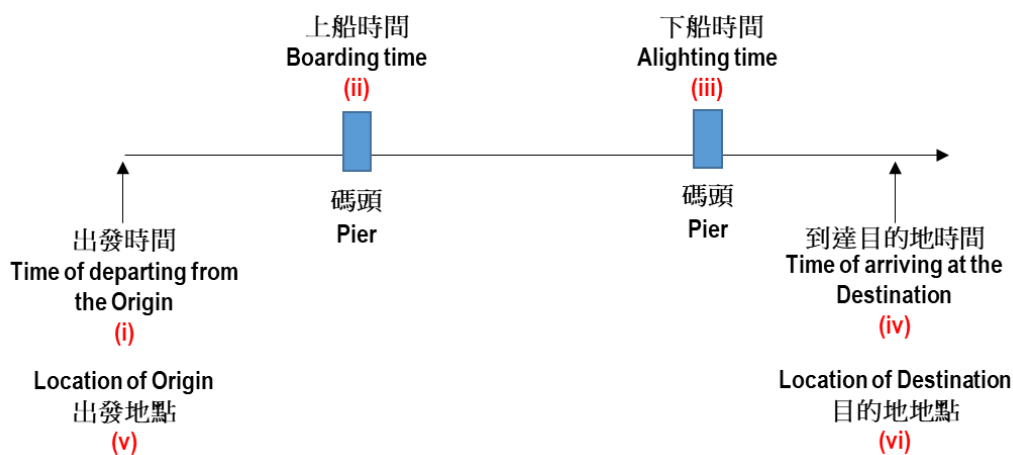
6. 你乘坐該渡輪航線的主要目的是甚麼？請選擇 3 個最常用的用途。（1：最常用；2：第二常用；3：第三常用）

What are the main trip purposes of travelling by this ferry route? Please choose the 3 most frequent purposes. (1: the most frequent purpose; 2: the second most frequent purpose; 3: the third most frequent purpose)

<input type="checkbox"/>	回家	Home
<input type="checkbox"/>	上班	Commuting
<input type="checkbox"/>	上學	School
<input type="checkbox"/>	購物或用餐	Shopping / Dining
<input type="checkbox"/>	娛樂	Recreation
<input type="checkbox"/>	周末旅遊	Weekly excursion
<input type="checkbox"/>	其他（請標註：_____）	Others (Please specify:_____)

7. 現在回想最後一次乘坐該渡輪航線。參閱下圖，你大約何時上船及下船？又何時從起點出發及到達目的地？請提供起點及目的地位置。（如果你乘坐的渡輪航線是來回，請以第一程的資料作答）

Now recall the last time of your trip on this ferry route. Refer to the figure below, what was the time of boarding and alighting from the ferry, and the time of departing from the origin and arriving at the destination? Please also indicate the location of the origin and the destination. (If you travel is in two-way, please answer this question based on the ORIGINATING trip)



	時間 Time (e.g. 08:00 / 22:30)	地點（道路，地區或地標） (例：85 薄扶林道／香港大學) Location (road, district or landmark) (e.g. 85 Pokfulam Road / The University of Hong Kong)
(i) 從起點出發 (i) Departing from the origin		
(ii) 上船 (ii) Boarding to the ferry		
(iii) 下船 (iii) Alighting from the ferry		
(iv) 到達目的地 (iv) Arriving at the destination		

8. 你到該渡輪航線碼頭的主要交通模式（紅色箭頭示）是甚麼？
 What was the main connecting transport mode to the ferry pier (shown as the red arrow)?



- | | | |
|--------------------------|---------------|----------------------------------|
| <input type="radio"/> | 只有步行 | Walking only |
| <input type="radio"/> | 只有踩單車 | Cycling only |
| <input type="checkbox"/> | 港鐵 | MTR |
| <input type="checkbox"/> | 巴士 | Buses |
| <input type="checkbox"/> | 輕鐵 | LRT |
| <input type="checkbox"/> | 小巴 | Minibuses |
| <input type="checkbox"/> | 電車 | Trams |
| <input type="checkbox"/> | 的士 | Taxis |
| <input type="checkbox"/> | 私家車 | Cars |
| <input type="checkbox"/> | 其他（請標註：_____） | Others (please indicate): _____* |

--- 受訪者只步行或踩單車到達碼頭 For respondents who walked / cycled to the pier (single mode) ---

8AS1. 你會如何評估整體的步行／踩單車經歷？

How would you rate the overall walking / cycling experience?

	1	2	3	4	5	6	7
方便程度 Convenience of walking / cycling (1 : 非常不方便 ; 7 : 非常方便) (1: very inconvenient; 7: very convenient)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全程度 Safety of walking / cycling (1 : 非常不安全 ; 7 : 非常安全) (1: very unsafe; 7: very safe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
舒適程度 Comfort of walking / cycling (1 : 非常不舒適 ; 7 : 非常舒適) (1: very uncomfortable; 7: very comfortable)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
整體 (1 : 非常不愉快 ; 7 : 非常愉快) Overall (1: very unpleasant; 7: very pleasant)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

--- 受訪者使用交通工具到達碼頭 For respondents taking mechanised transport to the pier ---

8AS2. 你從上一個中轉站或停車場步行到達碼頭所需步行時間大約多久？

What is the approximate walking time from the last transit stop or car park to the pier?

地鐵站 / 巴士站 / 輕鐵站 / 小巴士 / 電車站 / 的士站 / 停車場

MTR station / Bus stop / LRT station / Minibus station / Tram station / Taxi station / Car Park

（請圈出適當答案）(please circle as appropriate)

_____分鐘 minutes

8AS3. 你會如何評估整體的步行經歷？

How would you rate the overall walking experience?

	1	2	3	4	5	6	7
方便程度 Convenience of walking (1: 非常不方便; 7: 非常方便) (1: very inconvenient; 7: very convenient)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全程度 Safety of walking (1: 非常不安全; 7: 非常安全) (1: very unsafe; 7: very safe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
舒適程度 Comfort of walking (1: 非常不舒適; 7: 非常舒適) (1: very uncomfortable; 7: very comfortable)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
整體 (1: 非常不愉快; 7: 非常愉快) Overall (1: very unpleasant; 7: very pleasant)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. 你從該渡輪航線碼頭到達目的地的主要交通模式 (紅色箭頭示) 是甚麼？

What was the main connecting transport mode from the ferry pier to the destination (shown as the red arrow)?



- | | | |
|-----------------------|-----------------|----------------------------------|
| <input type="radio"/> | 只有步行 | Walking only |
| <input type="radio"/> | 只有踩單車 | Cycling only |
| <input type="radio"/> | 港鐵 | MTR |
| <input type="radio"/> | 巴士 | Buses |
| <input type="radio"/> | 輕鐵 | LRT |
| <input type="radio"/> | 小巴 | Minibuses |
| <input type="radio"/> | 電車 | Trams |
| <input type="radio"/> | 的士 | Taxis |
| <input type="radio"/> | 私家車 | Cars |
| <input type="radio"/> | 其他 (請標註: _____) | Others (please indicate): _____* |

--- 受訪者只步行或踩單車離開碼頭 For respondents who walked / cycled from the pier (single mode) ---

9AS1. 你會如何評估整體的步行/踩單車經歷？

How would you rate the overall walking / cycling experience?

	1	2	3	4	5	6	7
方便程度 Convenience of walking / cycling (1: 非常不方便; 7: 非常方便) (1: very inconvenient; 7: very convenient)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全程度 Safety of walking / cycling (1: 非常不安全; 7: 非常安全) (1: very unsafe; 7: very safe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

舒適程度 Comfort of walking / cycling (1 : 非常不舒適 ; 7 : 非常舒適) (1: very uncomfortable; 7: very comfortable)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
整體 (1 : 非常不愉快 ; 7 : 非常愉快) Overall (1: very unpleasant; 7: very pleasant)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

--- 受訪者使用交通工具離開碼頭 For respondents taking mechanised transport from the pier ---

9AS2. 你從碼頭步行到下一個中轉站或停車場所需步行時間大約多久？

What is the approximate walking time from the pier to the next transit stop or car park?

地鐵站 / 巴士站 / 輕鐵站 / 小巴士 / 電車站 / 的士站 / 停車場

MTR station / Bus stop / LRT station / Minibus station / Tram station / Taxi station / Car Park

(請圈出適當答案) (please circle as appropriate)

_____分鐘 minutes

9AS3. 你會如何評估整體的步行經歷？

How would you rate the overall walking experience?

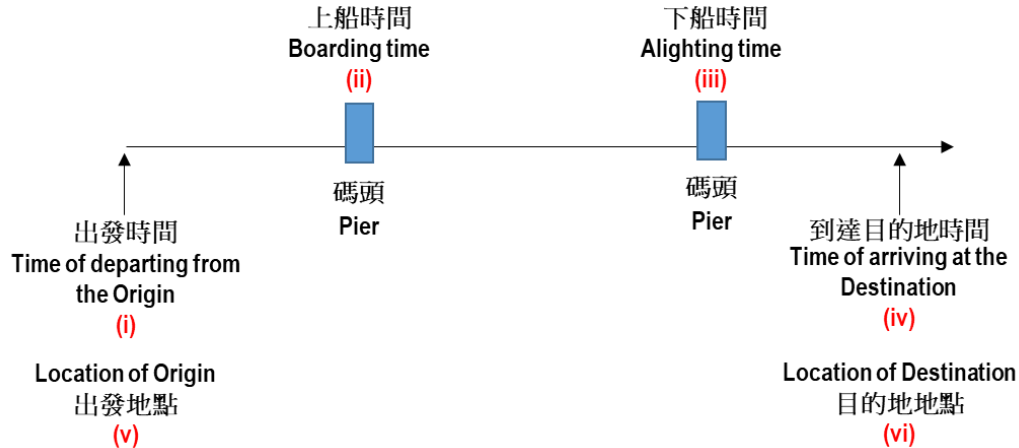
	1	2	3	4	5	6	7
方便程度 Convenience of walking (1 : 非常不方便 ; 7 : 非常方便) (1: very inconvenient; 7: very convenient)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全程度 Safety of walking (1 : 非常不安全 ; 7 : 非常安全) (1: very unsafe; 7: very safe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
舒適程度 Comfort of walking (1 : 非常不舒適 ; 7 : 非常舒適) (1: very uncomfortable; 7: very comfortable)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
整體 (1 : 非常不愉快 ; 7 : 非常愉快) Overall (1: very unpleasant; 7: very pleasant)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

來回乘搭的乘客須回答第10題。

FOR TWO-WAY FERRY PASSENGERS ONLY; IF NOT, PLEASE SKIP QUESTIONS 10

10. 現在回想最後一次乘坐該渡輪航線的回程航班。參閱下圖，你大約何時上船及下船？又何時從起點出發及到達目的地？請提供起點及目的地位置。

Now recall the last time of your **RETURNING** trip by this ferry route. As the following figure shows, what was the approximate time of boarding to and alighting from the ferry, and the time of departing from the origin and arriving at the destination?



	時間 Time (e.g. 08:00 / 22:30)	地點 (道路, 地區或地標) (例: 85 薄扶林道 / 香港大學) Location (road, district or landmark) (e.g. 85 Pokfulam Road / The University of Hong Kong)
(i) 從起點出發 (i) Departing from the origin		
(ii) 上船 (ii) Boarding to the ferry		
(iii) 下船 (iii) Alighting from the ferry		
(iv) 到達目的地 (iv) Arriving at the destination		

第三部分 現時渡輪服務的滿意程度
PART C SATISFACTION TO THE EXISTING FERRY SERVICES

11. 你會如何評估過去一星期所使用的渡輪服務？(1：非常不滿意；7：非常滿意)
How would you rate the satisfaction of the ferry services on this route? (1: very unsatisfied; 7: very satisfied)

** If you travelled on more than 1 ferry route last week, please choose one and specify:

** 如你曾乘搭多於一條渡輪航線，請選擇其中一條並列明航線：

由 From _____ 到 To _____

		1	2	3	4	5	6	7
(a) 票價	Fare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) 準時程度	Punctuality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) 班次頻密程度	Frequency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) 安全	Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) 旅途時間	Trip time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) 舒適程度	Comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) 整體	Overall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. 對你而言，你過去一星期所使用的渡輪航線服務有甚麼需要優先改善的地方？請選擇 3 個最重要地方並排列。（1：第一重要；2：第二重要；3：第三重要）

In your opinion, what is/are the priority areas for improvement of the service on this route? Please choose a maximum of 3 only and rank them. (1: the most important; 2: the second most important, 3: the third most important)

** If you travelled on more than 1 ferry route last week, please choose one and specify:

** 如你曾乘搭多於一條渡輪航線，請選擇其中一條並列明航線：

由 From _____ 到 To _____

<input type="checkbox"/>	票價	Fare
<input type="checkbox"/>	班次頻密程度	Frequency
<input type="checkbox"/>	服務可靠程度	Reliability
<input type="checkbox"/>	安全程度	Safety
<input type="checkbox"/>	旅途時間	Travel time
<input type="checkbox"/>	坐位數量	Number of seats
<input type="checkbox"/>	清潔程度	Cleanliness
<input type="checkbox"/>	舒適程度（例如空調／比較寬闊及舒適的座位）	Comfort (e.g. air-conditioning / wider & more comfortable seats)
<input type="checkbox"/>	其他輔助設施（例如洗手間／電視／行李位置）	Ancillary facilities (i.e. toilet / TVs / luggage compartments)
<input type="checkbox"/>	航線班次時間表資訊	Information of service timetable
<input type="checkbox"/>	傷殘人士設施	Facilities for disabled people
<input type="checkbox"/>	前線員工的禮貌	Manner of the frontline staff
<input type="checkbox"/>	其他（請標注：_____）	Others (please specify): _____*
<input type="radio"/>	沒有需要改善的地方	No further improvement needed

13. 根據你過去一星期所使用的渡輪航線，如果你不乘坐渡輪到達該目的地，你會選擇哪個交通工具模式代替渡輪？請選擇所有適用答案。（若替代交通模式多於一個才能完成，請在所有適當位置打勾）

Based on the ferry services that you used last week, what is your preferred alternative public transport mode if you do not take a ferry to the destination? (For multimodal travel, please tick all the appropriate boxes)

- | | | |
|--------------------------|----------------|---------------------------------------|
| <input type="checkbox"/> | 港鐵 | MTR |
| <input type="checkbox"/> | 巴士 | Buses |
| <input type="checkbox"/> | 輕鐵 | LRT |
| <input type="checkbox"/> | 小巴 | Minibuses |
| <input type="checkbox"/> | 電車 | Trams |
| <input type="checkbox"/> | 的士 | Taxis |
| <input type="checkbox"/> | 其他（請標注：_____） | Others (please specify): _____* |
| <input type="radio"/> | 沒有其他可替代的公共交通工具 | No alternative public transport route |

14. 根據問題 13，為甚麼你選擇渡輪代替其他交通工具？請選擇最重要的 3 個原因。

Based on Question 13, why do you choose ferry instead of other public transport modes? Please choose the 3 most important factors.

- | | | |
|--------------------------|----------------|--|
| <input type="checkbox"/> | 票價比較便宜 | More affordable |
| <input type="checkbox"/> | 服務比較可靠 | More reliable service |
| <input type="checkbox"/> | 交通時間較短 | Shorter travel time |
| <input type="checkbox"/> | 比較安全 | Safer travel |
| <input type="checkbox"/> | 與其他交通工具的連接比較良好 | Better connection to other transport modes |
| <input type="checkbox"/> | 渡輪碼頭附近可步行性較高 | Higher walkability to/from the ferry piers |
| <input type="checkbox"/> | 比較舒適 | More comfortable |
| <input type="checkbox"/> | 避免潛在道路交通擠塞問題 | Avoiding potential congestion on roads |
| <input type="checkbox"/> | 我喜歡接近海 | I like to be close to the sea |
| <input type="checkbox"/> | 能夠享受美麗的海上風景 | Able to enjoy the beautiful sea view |
| <input type="checkbox"/> | 其他（請標注：_____）* | Others (please specify): _____* |

15. 除了降低渡輪票價外，哪些因素能令你整體乘坐渡輪的經歷更為滿意？請排列 5 個最重要的因素。
（1：最重要；2：第二重要...5：第五重要）

Other than lowering of the fare, what would be the most important factors of making your ferry travel more satisfactory in general? Please rank the 5 most important factors. (1: the most important; 2: the second most important ... 5: the fifth most important)

- | | | |
|--------------------------|--------------------------------|---|
| <input type="checkbox"/> | 增加班次 | More frequent services |
| <input type="checkbox"/> | 改善碼頭設施（請舉例：_____） | Improving pier infrastructure (example: _____) |
| <input type="checkbox"/> | 碼頭提供廁所 | Provision of toilets at the pier |
| <input type="checkbox"/> | 碼頭提供免費無線上網服務 | Provision of free Wi-fi at the pier |
| <input type="checkbox"/> | 碼頭等待空間增加 | Larger waiting area at the pier |
| <input type="checkbox"/> | 於碼頭等待空間增加更多座位 | More seats provided at the waiting area of the pier |
| <input type="checkbox"/> | 透過公共交通工具（包括地鐵、專營巴士及小巴）改善碼頭的可達度 | Improving accessibility to the pier by public transport (including MTR, franchised bus and minibus) |
| <input type="checkbox"/> | 改善碼頭附近的步行體驗 | Improving the walking experience near the pier |
| <input type="checkbox"/> | 增加碼頭附近的活動（例如工作及購物地點） | More activities around the pier (i.e. working and shopping opportunities) |
| <input type="checkbox"/> | 其他（請標注：_____）* | Others (please specify): _____* |
| <input type="radio"/> | 沒有因素能增加我使用渡輪服務的意欲。 | There are no factors that can increase the tendency of using ferry. |

乘搭渡輪少於每星1期次的受訪者請完成16-19；乘搭渡輪最少每星期一次的受訪者請到題20。

Respondents who travel by ferry less than once a week please answer questions 16-19.

16. 如果以下渡輪航線（重新／開辦）營運，你會考慮乘坐哪條航線呢？請選擇適當的渡輪航線並指出該航線的地點。

Which of the following ferry routes would you consider taking should they be available (again)? Please choose the preferred origin and destination.

由 From	到 To 從下表選擇填上一個適當地點 (fill in any location from the list below)
<input type="checkbox"/> 大角咀 Tai Kok Tsui	
<input type="checkbox"/> 紅磡 Hung Hom	
<input type="checkbox"/> 九龍城 Kowloon City	
<input type="checkbox"/> 屯門 Tuen Mun	
<input type="checkbox"/> 觀塘 Kwun Tong	
<input type="checkbox"/> 北角 North Point	
<input type="checkbox"/> 西灣河 Sai Wan Ho	
<input type="checkbox"/> 啟德 Kai Tak	
<input type="checkbox"/> 西九文化區（位於尖沙咀西部，鄰近九龍港鐵站） West Kowloon Cultural District (West Tsim Sha Tsui near Kowloon MTR station)	

地點包括：尖沙咀，中環，三家村，西灣河，三家村，荃灣，屯門，北角，紅磡，大角咀，九龍城，西九文化區，觀塘，啟德，長洲，梅窩，坪洲，榕樹灣，索罟灣，愉景灣，馬灣，香港仔，北角村，榕樹灣，索罟灣，馬灣，大廟灣，東涌，沙螺灣，大澳，芝麻灣

The locations include Tsim Sha Tsui, Central, Wanchai, Sai Wan Ho, Sam Ka Tsuen, Sai Wan Ho, Kwun Tong, North Point, Hung Hom, Kowloon City, Kwun Tong, Tsuen Wan, Kai Tak, Tai Kok Tsui, West Kowloon Cultural District, Cheung Chau, Mui Wo, Peng Chau, Yung Shue Wan, Sok Kwu Wan, Discovery Bay, Ma Wan, Aberdeen, Yung Shue Wan, Ma Wan, Joss House Bay, Tung Chung, Sha Lo Wan, Tai O & Chi Ma Wan

17. 除了問題 16 所提及的渡輪航線，請建議一些你會考慮乘坐哪條航線（如果航線能重新或開辦營運）。

Other than the ferry routes mentioned in Question 16, please propose some ferry routes which you would consider taking should they be available (again).

	由 From	到 To
1		
2		
3		

18. 如果你會乘坐問題 16-17 所提及的渡輪航線，請問每條航線的可接受票價、預計班次及預計每星期乘搭次數是多少？

If you are going to travel by the ferry routes as mentioned in Question 16-17, what is the acceptable fare / maximum travel time / expected frequency / expected number of rides per week for you?

由 From	到 To

最高可接受票價（與現時其他公共交通工具票價比較） Maximum acceptable fare compared to current fare available by other public transport means	<input type="radio"/>	便宜 30%	30% cheaper
	<input type="radio"/>	便宜 15%	15% cheaper
	<input type="radio"/>	同樣	Same
	<input type="radio"/>	昂貴 15%	15% more expensive
	<input type="radio"/>	昂貴 30%	30% more expensive
最長交通時間（與現時其他公共交通工具時間比較） Maximum travel time compared to current travel time by other public transport means	<input type="radio"/>	短 30%	30% lower
	<input type="radio"/>	短 15 %	15% lower
	<input type="radio"/>	同樣	Same
	<input type="radio"/>	長 15%	15% higher
	<input type="radio"/>	長 30 %	30% higher
預計班次 Expected frequency	<input type="radio"/>	每 10 分鐘	every 10 mins
	<input type="radio"/>	每 20 分鐘	every 20 mins
	<input type="radio"/>	每 30 分鐘	every 30 mins
	<input type="radio"/>	每 45 分鐘	every 45 mins
	<input type="radio"/>	每 60 分鐘	every 60 mins
	<input type="radio"/>	多於 1 小時	more than 1 hour
預計每星期乘搭次數 Expected number of rides per week	<input type="radio"/>	每日 3 次或以上	more than 3 times a day
	<input type="radio"/>	每日 1-2 次	1-2 times a day
	<input type="radio"/>	每星期 4-6 次	4-6 times a week
	<input type="radio"/>	每星期 1-3 次	1-3 times a week
	<input type="radio"/>	少於每星 1 期次	Less than once a week

由 From	到 To

最高可接受票價（與現時其他公共交通工具票價比較） Maximum acceptable fare compared to current fare available by other public transport means	<input type="radio"/>	便宜 30%	30% cheaper
	<input type="radio"/>	便宜 15%	15% cheaper
	<input type="radio"/>	同樣	Same
	<input type="radio"/>	昂貴 15%	15% more expensive
	<input type="radio"/>	昂貴 30%	30% more expensive
最長交通時間（與現時其他公共交通工具時間比較） Maximum travel time compared to current travel time by other public transport means	<input type="radio"/>	短 30%	30% lower
	<input type="radio"/>	短 15 %	15% lower
	<input type="radio"/>	同樣	Same
	<input type="radio"/>	長 15%	15% higher
	<input type="radio"/>	長 30 %	30% higher
預計班次 Expected frequency	<input type="radio"/>	每 10 分鐘	every 10 mins
	<input type="radio"/>	每 20 分鐘	every 20 mins
	<input type="radio"/>	每 30 分鐘	every 30 mins
	<input type="radio"/>	每 45 分鐘	every 45 mins
	<input type="radio"/>	每 60 分鐘	every 60 mins
	<input type="radio"/>	多於 1 小時	more than 1 hour

預計每星期乘搭次數 Expected number of rides per week	<input type="radio"/>	每日 3 次或以上	more than 3 times a day
	<input type="radio"/>	每日 1-2 次	1-2 times a day
	<input type="radio"/>	每星期 4-6 次	4-6 times a week
	<input type="radio"/>	每星期 1-3 次	1-3 times a week
	<input type="radio"/>	少於每星 1 期次	Less than once a week

19. 除了降低渡輪票價外，哪些因素能增加你乘坐渡輪的意欲？請排列 5 個最重要的因素。（1：最重要；2：第二重要...5：第五重要）

Other than the lowering of ferry fare, what would be the most important factors that can increase your willingness of travelling by ferry? Please rank the 5 most important factors. (1: the most important; 2: the second most important ... 5: the fifth most important)

<input type="checkbox"/>	增加班次	More frequent services
<input type="checkbox"/>	改善碼頭設施（請舉例：_____）	Improving pier infrastructure (example: _____)
<input type="checkbox"/>	碼頭提供廁所	Provision of toilets at the pier
<input type="checkbox"/>	碼頭提供免費無線上網服務	Provision of free Wi-fi at the pier
<input type="checkbox"/>	碼頭等待空間增加	Larger waiting area at the pier
<input type="checkbox"/>	於碼頭等待空間增加更多座位	More seats provided at the waiting area of the pier
<input type="checkbox"/>	透過公共交通工具（包括地鐵、專營巴士及小巴）改善碼頭的可達度	Improving accessibility to the pier by public transport (including MTR, franchised bus, and minibus)
<input type="checkbox"/>	改善碼頭附近的步行體驗	Improving the walking experience near the pier
<input type="checkbox"/>	增加碼頭附近的活動（例如工作及購物地點）	More activities around the pier (i.e. working and shopping opportunities)
<input type="checkbox"/>	路面交通擠塞問題越趨嚴重	More serious road congestion
<input type="checkbox"/>	其他路面交通乘坐環境越趨擁擠	More crowded environment of other road transport
<input type="checkbox"/>	其他路面交通工具票價增加	Increasing fare of other road transport
<input type="checkbox"/>	離島地區活動增加	More activities in outlying islands
<input type="checkbox"/>	其他（請標注：_____）	Others (please specify: _____)

所有受訪者請完成問題20-26。

All respondents please complete Questions 20-26.

20. 你多大程度上同意下列句子？（1：非常不同意；7：非常同意）

To what extent do you agree with the following statement? (1: mostly disagree; 7: mostly agree)

	1	2	3	4	5	6	7
我非常認同擴大非固定班次的街渡渡輪服務。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I strongly believe that non-regular kaito ferry services should be expanded.							

**非固定班次的街渡渡輪類同「小型海上的士」。這些服務是按需求作安排，並能在指定的登岸梯級接載乘客。

** Non-regular kaitos are like 'small water taxis'. They are subject to demand and can pick up or drop off passengers at designated landing steps upon request.

21. 如果問題 20 的答案是大於「4」，你可以列出一些非固定班次的街渡渡輪載客點嗎（最多 5 個）？你願意付出多少費用？

If your answer in Question 20 is larger than 4, can you name some non-regular kaito ferry stops (a maximum of 5) that you have in mind?

1)	2)
3)	4)
5)	

22. 你平均每程願意付出的費用是多少？
What is the fare per trip you are willing to pay?

港幣 HKD _____

23. 在 2018 施政報告中，政府打算重新恢復「中環－紅磡」的渡輪航線。以下每一個情況均有 4 個選擇，請選出你認為最好的選擇。

In the Policy Address 2018, the HKSAR Government is proposing for re-commissioning the “Central - Hung Hom” ferry route. In each of the following case, you will be given 4 options to choose. Please indicate your MOST preferred option.

<p style="text-align: center;">路線：中環－紅磡 其他公共交通工具的資料（巴士） 單程票價：\$9.80（成人） 班次：5 至 12 分鐘一班 交通時間：約 30 分鐘 營運時間：05:45 – 00:30</p>	<p style="text-align: center;">Route: Central – Hung Hom Current details of other public transport modes (e.g. Bus) Single fare: \$9.80 (Adult) Frequency: Every 5 to 12 minutes Travel Time: around 30 minutes Operation Hours: 05:45 – 00:30</p>
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情況1 Case 1

	選擇1 Option 1	選擇2 Option 2	選擇3 Option 3	選擇4 Option 4
票價（與現時其他公共交通工具票價比較） Fare compared to other public transport	高10% 10% higher	高10% 10% higher	同樣 Same	低10% 10% lower
班次（與現時其他公共交通工具票價比較） Frequency compared to other public transport	低20% 20% lower	同樣 Same	同樣 Same	高20% 20% higher
交通時間（與現時其他公共交通工具時間比較） Travel time compared to other public transport	同樣 Same	高20% 20% higher	高20% 20% higher	低20% 20% lower
營運時間 Operation hours	07:00 - 19:30	06:00 - 23:30	07:00 - 19:30	06:00 - 23:30
空調 Air-conditioned	有 Yes	有 Yes	沒有 No	沒有 No
你認為最好的選擇 Your most preferred option	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

情況2 Case 2

	選擇1 Option 1	選擇2 Option 2	選擇3 Option 3	選擇4 Option 4
票價（與現時其他公共交通工具票價比較） Fare compared to other public transport	高10% 10% higher	低10% 10% lower	同樣 Same	同樣 Same
班次（與現時其他公共交通工具票價比較） Frequency compared to other public transport	同樣 Same	同樣 Same	高20% 20% higher	低20% 20% lower
交通時間（與現時其他公共交通工具時間比較） Travel time compared to other public transport	低20% 20% lower	低20% 20% lower	高20% 20% higher	同樣 Same
營運時間 Operation hours	07:00 - 19:30	06:00 - 23:30	06:00 - 23:30	06:00 - 23:30
空調 Air-conditioned	沒有 No	有 Yes	有 Yes	沒有 No
你認為最好的選擇 Your most preferred option	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

情況3 Case 3

	選擇1 Option 1	選擇2 Option 2	選擇3 Option 3	選擇4 Option 4
票價（與現時其他公共交通工具票價比較） Fare compared to other public transport	高10% 10% higher	同樣 Same	低10% 10% lower	低10% 10% lower e
班次（與現時其他公共交通工具票價比較） Frequency compared to other public transport	高20% 20% higher	同樣 Same	低20% 20% lower	高20% 20% higher
交通時間（與現時其他公共交通工具時間比較） Travel time compared to other public transport	同樣 Same	同樣 Same	低20% 20% lower	低20% 20% lower
營運時間 Operation hours	06:00 - 23:30	06:00 - 23:30	06:00 - 23:30	07:00 - 19:30
空調 Air-conditioned	沒有 No	有 Yes	沒有 No	有 Yes
你認為最好的選擇 Your most preferred option	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

情況4 Case 4

	選擇1 Option 1	選擇2 Option 2	選擇3 Option 3	選擇4 Option 4
票價（與現時其他公共交通工具票價比較） Fare compared to other public transport	同樣 Same	低10% 10% lower	同樣 Same	低10% 10% lower
班次（與現時其他公共交通工具票價比較） Frequency compared to other public transport	同樣 Same	低20% 20% lower	低20% 20% lower	同樣 Same
交通時間（與現時其他公共交通工具時間比較） Travel time compared to other public transport	低20% 20% lower	高20% 20% higher	低20% 20% lower	同樣 Same
營運時間 Operation hours	06:00 - 23:30	06:00 - 23:30	06:00 - 23:30	06:00 - 23:30
空調 Air-conditioned	沒有 No	沒有 No	有 Yes	沒有 No
你認為最好的選擇 Your most preferred option	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

第四部分 個人資料
PART D PERSONAL PARTICULARS

24. 你的性別是？

What is your gender?

- 男 Male
- 女 Female

25. 你的年齡是？

What is your age?

- 0-19
- 20-29
- 30-39
- 40-49
- 50-59
- ≥60

26. 你現時的職業是？

What is your occupation?

- | | |
|-------------------------------------|-------------------------------|
| <input type="radio"/> 全職就業人士 | Full-time employed |
| <input type="radio"/> 兼職就業人士 | Part-time employed |
| <input type="radio"/> 學生 | Students |
| <input type="radio"/> 家庭主婦 | Housewives |
| <input type="radio"/> 無業 | Unemployed |
| <input type="radio"/> 退休 | Retired |
| <input type="radio"/> 其他（請標註：_____） | Others (please specify:_____) |

- 問卷完 -

多謝參與本次問卷調查！

<END>

Thank you very much for your participation!