

Research Study on Open Road Tolling in Hong Kong

Stated Preference Survey Report

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1. INTRODUCTION

Open Road Tolling (ORT) by definition is to collect road toll without toll booths so as to facilitate the traffic flow with no stop and start. ORT in today's technological level is implemented by electronic means and very often termed as electronic road tolling (ERT).

Implementation of ORT/ERT is an important component of the Hong Kong Smart City Blueprint of the HKSAR Government initiative. In this connection, auto-toll has been implemented in toll roads in Hong Kong as an option for motorists since 1993. However, as a deposit and a monthly charge have to be borne by motorists, around some 300,000 out of the existing around 800,000 vehicle fleet in Hong Kong subscribe the auto-toll service. The current auto-toll system applies the RFID technology to perform the toll transaction of the debit card installed on the vehicle front screen. The Hong Kong Smart City Blueprint states that Government will complete an ERT study to gauge the feasibility of replacing the toll booths in 2018. To expedite the implementation of ORT/ERT and supplement Government's feasibility study, there is a need to look into the users' (motorists) expectations/ requirements of the ORT/ERT system and formulate the best ORT/ERT arrangement to meet users' requirements.

A questionnaire survey on users' acceptance, preference and requirements of ORT/ERT regime was therefore conducted to understand (1) the acceptable of users in types of data to be captured, data storage, usage and disposal; (2) the users' acceptance in variable charging level according to congestion level apart from vehicle type; and (3) the users' preference of in-vehicle on-board unit (OBU) and the users' requirements for maintenance and support as well as handling of complaints on-site and off-site. This report summarised the survey findings.

2. SURVEY QUESTIONNAIRE OVERVIEW

2.1. Questionnaire Design

The first step of the survey was to design the questionnaire. The questionnaire is divided into three parts (questionnaire survey form is attached in **Appendix I**). Part A collects the basic information of the questionnaire respondents. Part B records some basic habitual characteristics of using toll-road and tunnel from the motorists. Part C collects the preference concerning the use of ORT indicated by the respondents and the main part of the stated preferences games.

2.2. Survey Details

The online questionnaire was carried out from 6 September 2018 (Thursday) to 15 September 2018 (Saturday). The interviewer conducted the face-to-face interviews at various location at shopping centre car parks, taxi stands, green minibus stands, bus terminus and industrial areas. Besides, some driver members from franchised bus operators, taxi associations, trucking industry/goods vehicle drivers associations and non-governmental organizations (NGOs) had also responded.



Face-to-face interviews conducted at various locations



2.3. Number of Survey Records

The sample size is target and set as 1,000 respondents for this study. Upon the end of survey, a total of 1,106 respondents was interviewed. 974 out of 1,106 records are valid and completed.



3. SURVEY FINDINGS

3.1. Part A. Basic Information

Exhibit 1 shows the percentage of male and female respondents. Nearly 89% are male respondents while 11% are female.



Exhibit 2 shows the vehicle types owned or driven by the respondents. The type of private

car consist of 47.6% while the light van and light goods vehicle consists of 14.4%.

Exhibit 2 – Percentage of vehicle types owned or driven by respondents



Exhibit 3 displays the age profile of the respondents. A total of 31% of respondents falls into the age range between 35-44. Another 26.3% of respondents falls into the age range between 45-54.







3.2. Part B. Basic habitual characteristics of using toll-road/tunnel from the motorists

Exhibit 4 shows the average daily usage of toll roads/tunnels of the respondents. On average, 46.3% of the respondents use more than or equal to 1 times to 4 times of toll roads/tunnels per day. It is found that the average daily usage of toll roads/tunnels of taxi driver respondents is higher than other groups. 66% of the respondents use 9 times to 16 times of toll roads/tunnels per day while 18.9% of whom use 5 times to 8 times respectively.



Exhibit 4 – Average daily usage of toll roads/tunnels

Exhibit 5 shows whether the respondents are Autotoll users or non-Autotoll users. Over 54% of respondents are Autotoll users. In particular, 94.3% of taxi driver respondents are non-Autotoll users. The results also match with some characteristics of the taxi trade. Since majority of taxi drivers are self-employed, it is not surprised that they are reluctant to bear the extra administration fees for using Autotoll. In contrast, 81.6% respondents in the group of buses indicated they are Autotoll users. Usually, bus drivers are employed by public bus



companies whose administration fees of using Autotoll are borne by their employing companies.



Exhibit 5 – Percentage distribution of Autotoll users or non-Autotoll users

Exhibit 6 shows the current toll payment method chosen by the respondents. About 53% of respondents paid the toll by only using Autotoll.



* Remark: Percentages were not added up to 100% as respondent is allowed to select multiple payment methods.



Exhibit 7 shows the percentage distribution of company car and self-owned car of the respondents. More than 55% of respondents are driving their own cars.



Exhibit 7 – Percentage distribution of company car and self-owned car of respondents



3.3. Part C. User Preference

非常不贊成

Exhibit 8 shows the respondents' opinions regarding full application of Open Road Tolling (ORT) in Hong Kong. 55.6% and 19.4% of respondents agreed and extremely agreed. 17.2 respondents maintained neutral opinion on this question while only 5.9% and 1.9% of respondents disagreed and extremely disagreed. Although more than half of taxi drivers agreed the full application of ORT in Hong Kong, it is worth nothing that 42.3% of taxi driver respondents opined neutral opinion on this question which account for a significant proportion of this group.

1.9% 不贊成 5.9% 中立 贊成 17.2% 55.6% 55.6% 非常贊成 19.4% 19.4% Private Cars / Motorcycles Taxis 不贊成 非常贊成 4.9% 中立 14 14.3% 中立 42.3% 替成 42.3% 非常贊成 贊成 55.8% 60.6% 17.4% Vans/Goods Vehicles **Buses** 非常不贊成 非常不贊成 1.1% 不贊成 1.4% 不贊成 8.4% 16.79 7% 贊成 中立 44.4% 非常贊成 44.4% 贊成 16.7% 57.7% 中立 17.2% 非常贊成 17.2% 28.4% 28.4%

Exhibit 8 – Percentage distribution of opinions toward full application of ORT



Exhibit 9 shows respondents' preferences of payment methods for toll collection. 53.3% of respondents accepted both methods. 28.8% and 17.9% of respondents preferred using debit card and credit card respectively. It is worth pointing out that only 17.9% of respondents preferred credit card and there is no obvious difference between each group of respondents. It reflected that motorists generally did not prefer using credit card to pay for tolls. In particular, 66% of taxi driver respondents preferred using debit card.



Exhibit 9 – Preferences of payment methods for toll collection



Exhibit 10 shows respondents' degree of acceptance on the disclosure of personal privacy when using ORT. A 39.3% of respondents held neutral opinion on this question. 28.4% and 2.9% of respondents accepted and extremely accepted to disclose their privacy. Among these respondents, more than half of whom are existing Autotoll users. However, 23% and 6.5% refused and extremely refused to do so.







Exhibit 11 shows respondents' opinions on the responsible organization of managing data generated from ORT. 59.4% respondents chose the Transport Department (TD) while 20% of respondents considered operator of ORT is more appropriate. The remaining 20.6% of respondents had no concern on this question. In particular, almost 85% of respondents in the group of taxi preferred the data managed by the ORT operator.

Exhibit 11 – Opinions on the responsible organization of managing data from ORT





Exhibit 12 shows respondent's opinions on the customer service, customer enquiry and complaint handlings. About 53% of respondents choose "24 hours hotline to be provided by ORT operator" as their choice of customer service.





- 1- 營運商提供"24 小時服務熱綫"
- 2- 營運商提供便利的服務站(例如在各大加油站、停車場等)
- 3- 營運商提供緊急售後及維修服務
- 4 營運商提供手機應用程式(Mobile Apps)讓使用者可隨時查閱戶口情況

*Percentages were not added up to 100% as respondent is allowed to select multiple customer service items





Exhibit 13 shows respondents' opinions on using ORT system as alternative payment system of other infrastructures. 73% of respondents agreed ORT can be used as alternative payment system of other infrastructures but 6.6% of respondents held opposite opinion. The remaining 20.4% respondents had no comment on this question. There is no significant difference between these groups.



Exhibit 13 – Opinions on using ORT system as alternative payment system of other infrastructures



Exhibit 14 shows respondents' opinions on renewal of the existing Motor Vehicle Licence ("車輛牌照" 俗稱 "行車證") to smart card with additional functions for ORT system. 58.4% of respondents agreed to change from existing Motor Vehicle Licence to a new smart card. However, 11.8% of respondents disagreed. The remaining 29.8% respondents had no comment on this question. For the group of taxi drivers, only 43.4% of respondents agreed on this question while 41.5% had no comment.







The stated preference (SP) survey was used to assess the relative impact of key attributes affecting the choice of ORT users. Three key attributes were covered in this SP survey. They are:

- the level of inconvenience (requiring installation of in-vehicle on-board unit (OBU))
- OBU's maintenance responsibility; and
- the level of administration fee.

Respondents were presented a set of cards showing different combinations of the attributes. Respondents were requested to indicate their choices according to their preference.



Exhibit 15 shows respondents answer to card A.





Buses













Exhibit 16 shows respondents answer to card B.



Private Cars / Motorcycles











Buses





Exhibit 17 shows respondents answer to card C.



Private Cars / Motorcycles







Vans/Goods Vehicles





Buses



Exhibit 18 shows respondents answer to card D.



Private Cars / Motorcycles







Buses

Vans/Goods Vehicles







Exhibit 19 shows respondents answer to card E.



Private Cars / Motorcycles





Vans/Goods Vehicles









Exhibit 20 shows respondents answer to card F.



Private Cars / Motorcycles





Vans/Goods Vehicles









Exhibit 21 shows respondents answer to card G.



Private Cars / Motorcycles





Vans/Goods Vehicles









Exhibit 22 shows respondents answer to card H.



Private Cars / Motorcycles





Vans/Goods Vehicles









Exhibit 23 shows respondents answer to card I.



Private Cars / Motorcycles





Vans/Goods Vehicles









Exhibit 24 shows respondents answer to card J.



Private Cars / Motorcycles





Vans/Goods Vehicles







Exhibit 25 shows respondents answer to card K.



Private Cars / Motorcycles 兩者都有可能選





 Vans/Goods Vehicles

 雨者都有可能選择

 6.6%

 多數會選擇情況

 30.7%

 -定會選擇情況

 58.5%

 58.5%







Exhibit 26 shows respondents answer to card L.





3.4.1. Interpretation of the Ordinary Regression Model

The Stated Preferences (SP) games were designed to capture the trade-off information between the three major attributes being investigated including the level of inconvenience (i.e. whether install the in-vehicle on-board unit (OBU) or not); OBU's maintenance responsibility (i.e. no responsibility (if does not need to install) or if need to install maintenance to be done by the operator or the car owners)); and level of administration fee (i.e. \$0, \$35 or \$70). Therefore, it is important to examine the choice records made by individual respondents so as to screen out the illogical results prior to undertaking any further data analysis. To do this, data collected for each batch of records provided by the same respondent was verified based on the test of inconsistent choices. Test of inconsistent choices means a respondent arbitrarily answered the SP questions or provided partially illogical results. For example, the responses may reveal a tendency of choice for the more expensive or inconvenient alternative for, say 6 out of the 12 SP questions. In some other cases, a respondent may consistently chose the expensive or/and inconvenient choices. These cases could distort the data set and eventually fail to reveal the trade-off property.

3.4.2. Model Formulation

For this particular SP surveys, it was assumed that the travellers' choices could be modelled by the multi-logit formulation with linear combination of the factor attributes as the utility function which was suitable for the adopted SP survey design with two alternative labelled choices in each set of SP games.

$$P(k \mid 1,...n) = \frac{\exp(V_k)}{\sum_{i=1}^{n} \exp(V_i)}$$

where P(k | 1,...,n) is the probability of choosing the alternative k given n alternatives are available in the choice set; V_k is the utility function in the expression as $V_k = \sum \beta_j x_j$; x_j is the independent variable i (or factor attribute) such as the level of inconvenience, maintenance responsibility, and the level of administration fee; and β_i is the model coefficients for the independent variable j to be determined. Equivalently, the formulation can be converted into the form with the logarithm of odds ratio of any two alternative choices, say r and s, and the difference of the utilities. These logarithms of odd ratios formulate the basis of employing the pairwise SP experiment games.

$$In\left(\frac{P(r\mid 1,...n)}{P(s\mid 1,...n)}\right) = V_r - V_s = In\left(\frac{P(r\mid r,s)}{P(s\mid r,s)}\right)$$

This formulation can be easily calibrated by applying the linear regression model. The probabilities of choosing the primary group of choices under various strength of preference are assumed as follows:

Table : Probabilities of Choosing the Primary Choice under Various Strength of Preference



Strength of Preference	Probability of choosing the primary choice	Logarithm of the odd ratio
Definitely choose the primary choice (Option A in this Survey)	0.9	2.1972
Probably choose the primary choice (Option A in this Survey)	0.7	0.8473
No preference	0.5	0
Probably choose the alternative choice (Option B in this Survey)	0.3	-0.8473
Definitely choose the alternative choice (Option B in this Survey)	0.1	-2.1972

3.4.3. Model Results

Aggregated Model: Model 1

During the model development stage, both aggregated models and disaggregated models for car owners and company car drivers were developed. The SP games were designed to measure the choice behaviours between Option B having an increased Level of Inconvenience and Maintenance Responsibility but lower Level of Administration Fee over Option A.

		Car Owners	Company Car
	All Drivers	Drivers	Drivers
Level of Inconvenience	-0.35	-0.34	-0.36
Maintenance Responsibility	-0.25	-0.27	-0.22
Level of Administration Fee	-0.61	-0.69	-0.49
Adjusted R Square	0.39	0.50	0.27

Table : Linear Regression Model Outputs

The linear regression results showed that all the model coefficients for the three factors are logical. The p-values also indicated that the coefficients are all significant in the regression model. The coefficients for all the three attributes revealed a negative effect on the choice of open road tolling schemes reflecting increased level of inconvenience, maintenance responsibility and level of administration fee would reduce the probability of choosing the concerned open road tolling scheme. Considering the aggregated model for all drivers, the Level of Administration Fee has bigger impact on the choice of open road tolling scheme than the other two factor attributes. However, the effect of administration fee does not appear to be significantly dominant over the other two factor attributes.

Disaggregated Model Results:

Model 2 – By Type of Car Owners

Comparing the two disaggregated models, it suggests that different users may have different considerations. The effects of administration fee and maintenance responsibility



appeared to be much more significant on car owner drivers than on company car drivers, which is logical. It reflects that car owner drivers are clearly more cost sensitive (i.e. administration and maintenance fees). For company car drivers, they tend to be more concerned about the level of inconvenience but the tendency appears to be fragmented (adjusted R^2 of just 0.27).

Model 3 – by Vehicle Types

	Passenger Car	Тахі	Goods Vehicle	Public Transport
Level of Inconvenience	-0.60	-0.97	-0.48	-0.45
Maintenance Responsibility	-0.39	-0.25	-0.37	-0.33
Level of Administration Fee	-0.83	-0.99	-0.95	-0.78
Adjusted R Square	0.57	0.48	0.61	0.44
Sample Size	493	52	197	231

As for the considerations for different types of vehicle, the model coefficients for the three factors are also logical and same as the aggregated model, which reveals a negative effect on the choice of open road tolling schemes. The effects of all the three factors appear to be stronger than those in Models 1 and 2 above. It indicates that there are stronger differences between the considerations for different types of vehicles in choosing their most preferred open road tolling schemes. For taxi users, it is very clear that they are most concerned about the level of inconvenience (i.e. whether an OBU should be installed or not) and the level of administration fee. The reason is clear these factors would probably affect their commercial operations the most. As for goods vehicles, they are more concerned about maintenance responsibility and the level of administration fee. For public transport drivers, it is very obvious that they are least concerned for the level of inconvenience and level of administration fee because the drivers themselves may not have any responsibility in these factors.



Model 4 – By Age

	Aged 55 or above	Aged below 55
Level of Inconvenience	-0.42	-0.60
Maintenance Responsibility	-0.35	-0.37
Level of Administration Fee	-0.80	-0.87
Adjusted R Square	0.48	0.57
Sample Size	191	783

As for age differences, the model coefficients for the three factors are also logical and same as the aggregated model, which reveals a negative effect on the choice of open road tolling schemes. The effects of all the three factors appear to be stronger than those in Models 1 and 2 but weaker than in Model 3. The model results also indicate that young drivers have higher concerns on all the three factors over older drivers, especially for the level of inconvenience. Drivers at different age are also most concerned about the level of administration fee among the three factors as administration fee will directly increase their operating cost.

Summary of the Model Results

The linear regression results showed that all the model coefficients for the three factors are logical. The p-values also indicated that the coefficients are all significant in the regression model. The coefficients for all the three attributes revealed a negative effect on the choice of open road tolling schemes reflecting increased level of inconvenience, maintenance responsibility and level of administration fee would reduce the probability of choosing the concerned open road tolling scheme.

Considering the aggregated model for all drivers, the Level of Administration Fee has bigger impact on the choice of open road tolling scheme than the other two factor attributes. However, for the two disaggregated models, the effect of administration fee does not appear to be significantly dominant over the other two factor attributes. This suggests that different users may have different considerations. Comparing results for different users, the effects of administration fee and maintenance responsibility appeared to be much more significant on car owner drivers than on company car drivers, which is logical. It reflects that car owner drivers are clearly more cost sensitive (i.e. administration and maintenance fees). For company car drivers, they tend to be more concerned about the level of inconvenience but the tendency appears to be fragmented (adjusted R² of just 0.27).



4. CONCLUSION

As expected, private cars drivers are infrequent toll roads/tunnel users while commercial vehicle drivers are usually frequent toll roads/tunnel users. Generally speaking, taxi drivers will adopt cash payment in using toll roads/tunnel while bus and green mini-bus drivers are Auto-toll users (installed by their companies).

In the survey, an overall of 75% of respondents agreed to the full application of Open Road Tolling (ORT) in Hong Kong. Nearly 30% respondents opt for debit card as the only payment method in ORT. Concerning the degree of acceptance on the disclosure of personal privacy reflected by the respondents, it is still a controversial issue which is worthy for further studying in future.

About 53% of respondents choose "24 hours hotline to be provided by ORT operator" as their choice of customer service. Nearly 60% of respondents considered that TD should be the responsible organization for managing data generated from ORT. 73% of respondents agreed ORT can be used as alternative payment system of other infrastructures, such as car park fees payment and fuel payment at petrol station. 58.4% of respondents agreed to change from existing Motor Vehicle Licence to a new smart card, with additional function of ORT.

The coefficients for all the three attributes revealed a negative effect on the choice of open road tolling schemes reflecting increased level of inconvenience, maintenance responsibility and level of administration fee would reduce the probability of choosing the concerned open road tolling scheme.

Considering the aggregated model for all drivers, the level of administration fee has bigger impact on the choice of open road tolling scheme than the other two factor attributes.

The effects of administration fee and maintenance responsibility appeared to be much more significant on car owner drivers than on company car drivers, which is logical. It reflects that car owner drivers are clearly more cost sensitive (i.e. administration and maintenance fees).



Appendix I – ORT User' Preference Survey Questionnaire

1	7						
24	香	港	政	策	研	究	所
11	Hon	g Kon	g Poli	cy Re	searc	h Inst	itute

香港政策研究所

隧道/公路【電子自動收費系統】使用者選擇問卷調查

問卷編號:	
訪問員姓名:	
訪問地點:	

日期:_____ 時間:_____

訪問員先有禮貌地詢問受訪者是否持有有效的香港駕駛執照,答案為"是"才開始本問卷調查

介紹:

你好!我哋香港政策研究所現正進行一項有關在隧道/公路收費上,實施【電子自動收費 系統】嘅研究調查。希望同你做個簡短訪問。所有資料係絕對保密,只會用作綜合統計 分析。

(A)部分:基礎資料:

A1. 性別:		[單選]
	男	1
	女	2

A2. 請問閣下所駕駛的車輛為:		[單選]
	1. 電單車	1
	2. 私家車	2
	3. 的士	3
	4. 私家小型巴士	4
	5. 公共小巴	5
	6. 輕型貨車	6
	7. 中型/大型貨車	7
	8. 非專利巴十	8
	9. 專利巴十(單層)	9
	10. 專利巴士(雙層)	10



A3. 年齡:		[單選]
	18-24	1
	25-34	2
	35-44	3
	45-54	4
	55-64	5
	>64	6

【第(A)部分完結,請繼續進行(B)及(C)部分】



(B) 部分:使用收費公路習慣:

B1. 請問閣下 <u>平均每日</u> 使用收費隧道/收費		[單選]
公路的次數:	<1	1
	1-4	2
	5-8	3
	8-16	4
	16 次以上	5

B2. 請問閣下 <u>現時</u> 是否快易通(即係		[單選]
Autotoll)用戶:	是	1
	否	2
	曾經是,但已經停用	3

B3. 請問閣下使用收費公路較常採用那		[可選多項]
種付款方式:	現金	1
(可選多過一項)	快易通 (即係 Autotoll)	2
	八達通	3
	非接觸式信用卡	4

B4. 請問閣下所駕駛的車輛為:		[單選]
	公司車	1
	自己車	2

【第(B)部分完結,請繼續進行最後(C)部分】



(C)部分:主要問卷部分-你對【電子自動收費系統】不同特徵的選擇

C1. 請問你是否贊成在全港所有道路收費點都採用 【電子自動收費系統】? (看圖)(調查員展示圖片)	非常不贊成 不贊成	[單選] 1 2
由目前:	中立 贊成 非常贊成	3 4 5
改爲:		
ORIN RAAD TOLINO Z 162RD STREET RAAA 41		



C2. 閣下車輛經過收費點時需繳付隧道/公路費用,你 最接受下列那種繳費的方式?		[單選]
 1. 需預先充值的預付卡; 2. 信用卡; 	預付卡 信用卡 兩者皆可	1 2 3
需預先充值的 預付卡 信用卡 CREDIT CARD 7253 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 7945 1295 725 3255 795 1295 725 3255 795 1295 725 3255 795 1295 725 3255 795 1295 725 325 795 1295 725 795 1295		

C3. 如果實施【電子自動收費系統】需要收集個人/車		[單選]
輛資料。閣下對這些資料(例如車內裝置是否有識別	非常不願意	1
编號/產品序號、車內裝置會儲存甚麼資料、在駛經	不願意	2
收費點時會否接收到其他智能卡的資料、全自動電子	中立	3
道路收費系統內儲存甚麼資料等)願意披露的程度	願意	4
為:	非常願意	5

C4. 閣下的意見應該由哪個機構管		[單選]
理【電子自動收費系統】所儲存	運輸署	1
的數據	道路收費營運商	2
	無所謂	3

香港政策石 Hong Kong Policy Resea	开 孚 arch Ir	f 所 Istitute	
C5. 閣下對【電子自動			[可選多項]
收費系統】的營運商的	1.	營運商提供"24 小時服務熱綫";	1
客戶服務/處理查詢及	2.	營運商提供便利的服務站(例如在各大加	2
投訴的要求:		油站、停車場等);	
	3.	營運商提供緊急售後及維修服務;	3
	4.	營運商提供手機應用程式(Mobile Apps)	4
		讓使用者可隨時查閱戶口情況;	
	5.	其他 (請簡單註明):	5

C6. 閣下是否贊成【電子自動收費系統】,可作爲其		[單選]
他交通基建之收費系統之用(例如停車場、或其它基	贊成	1
建)	不贊成	2
	無意見	3

C7. 閣下是否贊成把運輸署發出的行車證改成智能		[單選]
咭,安裝在車上,除了現時的用途外,智能咭可用作	贊成	1
通過【電子自動收費系統】時的付款咭	不贊成	2
	無意見	3

__香港政策研究所 Hong Kong Policy Research Institute

跟住落黎,我會比一些卡你睇,卡上面寫住唔同的【電子自動收費系統】特徵組合,麻煩 你按你最能接受的組合做選擇。

(是否需要在車輛內安裝特定的裝置)

調查員展示卡片 1

- 用戶方便程度
- 裝置之維修保養 (保養、移除、更換車内裝
- 行政費

(保養、移除、更換車內裝置是否由營運商負責) (是否需要繳付行政費及其收費水平)

調查員洗勻所有卡片,然後遞上第一張卡片

呢度係第一張卡,請你話比我知,根據		[單選]
你認爲卡片上面不同組合的兩種情況A	一定會選擇情況 A	1
同 B,你會比較傾向選擇那種情況,係	多數會選擇情況A	2
一定會定係多數會呢?	一定會選擇情況 B	3
	多數會選擇情況 B	4
	兩者都有可能選擇	5

調查員記錄受訪者第一張卡片的選擇,然後攞走張卡。重覆過程至第12張卡,記錄 受訪者所抽到的卡號,以及受訪者的選擇,

			上堤	[爲註耂踞懌]
			下幼に	【又可有医择】
		D-1		
		D-2		
一定會選擇情況 A	 1	D-3		
多數會選擇情況A	 2	D-4		
一定會選擇情況 B	 3	D-5		
多數會選擇情況 B	 4	D-6		
兩者都有可能選擇	 5	D-7		
		D-8		
		D-9		
		D-10		
		D-11		
		D-12		

[問卷結束,感謝你寶貴的時間!]

卡片部分一調查所用卡片

(卡 A)	情況 A	情況 B
用戶方便性	無需安裝車内裝置	需要安裝車内裝置
裝置之維修保養	無	由車主負責
行政費	需要每月 70 元	需要每月 35 元

(卡 B)	情況 A	情況 B
用戶方便性	無需安裝車内裝置	需要安裝車内裝置
裝置之維修保養	無	由車主負責
行政費	需要每月 35 元	無需行政費

(卡 C)	情況 A	情況 B
用戶方便性	無需安裝車内裝置	需要安裝車内裝置
裝置之維修保養	無	由車主負責
行政費	需要每月 70 元	無需行政費

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(卡 D)	情況 A	情況 B
用戶方便性	無需安裝車内裝置	需要安裝裝置
裝置之維修保養	無	由營運商負責
行政費	需要每月 70 元	需要每月 35 元

(卡 E)	情況 A	情況 B
用戶方便性	無需安裝車内裝置	需要安裝裝置
裝置之維修保養	無	由營運商負責
行政費	需要每月 35 元	無需行政費

(卡 F)	情況 A	情況 B
用戶方便性	無需安裝車内裝置	需要安裝裝置
裝置之維修保養	無	由營運商負責
行政費	需要每月 70 元	無需行政費

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(卡 G)	情況 A	情況 B
用戶方便性	需要安裝裝置	需要安裝裝置
裝置之維修保養	由營運商負責	由車主負責
行政費	需要每月 70 元	需要每月 35 元

(卡 H)	情況 A	情況 B
用戶方便性	需要安裝裝置	需要安裝裝置
裝置之維修保養	由營運商負責	由車主負責
行政費	需要每月 35 元	無需行政費

(卡)	情況 A	情況 B
用戶方便性	需要安裝裝置	需要安裝裝置
裝置之維修保養	由營運商負責	由車主負責
行政費	需要每月 70 元	無需行政費

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(L +)	情況 A	情況 B
用戶方便性	需要安裝裝置	需要安裝裝置
裝置之維修保養	由車主負責	由營運商負責
行政費	需要每月 70 元	需要每月 35 元

(卡 K)	情況 A	情況 B
用戶方便性	需要安裝裝置	需要安裝裝置
裝置之維修保養	由車主負責	由營運商負責
行政費	需要每月 35 元	無需行政費

(卡 L)	情況 A	情況 B
用戶方便性	需要安裝裝置	需要安裝裝置
裝置之維修保養	由車主負責	由營運商負責
行政費	需要每月 70 元	無需行政費