



# Air Quality and Climate Change Study

## *WWF Hong Kong*

Prepared for:



**WWF** *for a living planet*<sup>®</sup>

Client Contacts:

Liam Salter

Monika Fung

TNS Consultants:

Anne Woodhams

Umang Pabaru

Vincent Kwong

J67695 - 25 May 2007





# Contents

	Page
Background	4
Objectives	5
Research Methodology	6
Respondent Profiles	7
General Public's Concern towards Environmental Problems	14
General Public's Awareness and Knowledge of Air Pollution	19
Relationship between Air Pollution and Climate Change	24
Responsibility of Different Parties towards Environmental Problems	30
Evaluation of Government Offices	35
Appendix	40

Background

Objectives

Research Methodology





## Background

- In recent years, the issue of Hong Kong's air quality is of increasing concern because air pollution has become visually more evident.
- Concentrations of harmful pollutants in the air of Hong Kong have increased stemming from Guangdong's economic activities and road-vehicle emissions.
- Despite the fact that greater emphasis is placed on tackling air pollution including the Policy Address, such efforts are not significant enough to tackle the heart of the issue yet.
- Therefore, WWF HK is keen on overcoming this political inertia through understanding the opinions and attitudes of key target groups in order to design the appropriate messages to encourage their participation in improving Hong Kong's air quality.



# Research Objectives

The Overall Research Objective:

- **To acquire the opinions and attitudes of both the general public and specific target groups towards air pollution in Hong Kong**

- **Specific Research Objectives:**

- Determine the public's understanding of the health impacts of air pollution
- Investigate the public's beliefs on the sources of and solutions to pollution
- Understand public awareness and expectation of where the responsibility lies
- Understand the possible actions or efforts of the public in addressing/solving the issues
- Understand the sources from which the public seeks relevant information about air pollution and climate change



# Methodology

- **Methodology**

- Online questionnaire using TNS Access Panel

- **Target Respondents**

- Males / Females, aged 15 – 64 years

- **Sample Size**

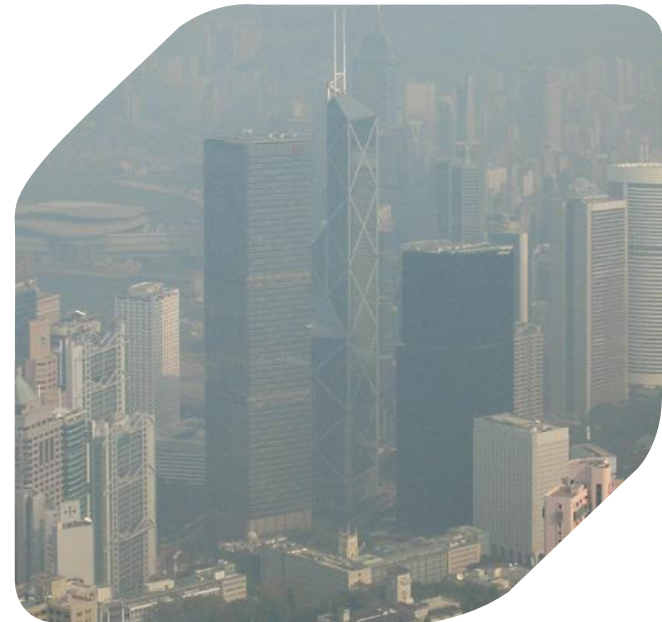
- Total n = 1003

- **Interview Length**

- Approx. 15 minutes

- **Survey Period**

- 19 – 26 April, 2007



# Respondent Profiles



## Respondent Profiles

	Male	Female	Total
15 – 24 years old	85	94	179
25 – 34 years old	92	117	209
35 – 44 years old	110	136	246
45 – 54 years old	116	120	236
55 – 64 years old	69	64	133
<b>Total</b>	<b>472</b>	<b>531</b>	<b>1003</b>



## Age and Gender Distribution in Hong Kong (Mid-2006)

Age \ Gender	Male		Female	
	Number	%	Number	%
0 - 4	115 300	1.6	107 000	1.5
5 - 9	164 000	2.3	153 000	2.2
10 - 14	219 300	3.1	206 400	2.9
15 - 19	226 700	3.2	216 400	3.1
20 - 24	224 100	3.2	238 700	3.4
25 - 29	225 600	3.2	256 800	3.7
30 - 34	243 300	3.5	319 500	4.6
35 - 39	258 700	3.7	353 000	5.0
40 - 44	312 800	4.5	385 300	5.5
45 - 49	332 600	4.8	349 700	5.0
50 - 54	265 500	3.8	276 400	4.0
55 - 59	221 400	3.2	216 300	3.1
60 - 64	129 700	1.9	117 900	1.7
65 - 69	124 800	1.8	116 000	1.7
70 - 74	115 000	1.6	117 100	1.7
75 - 79	84 900	1.2	98 200	1.4
80 - 84	46 400	0.7	66 800	1.0
≥ 85	30 200	0.4	59 700	0.9
<b>Total</b>	<b>3 340 300</b>	<b>47.8</b>	<b>3 654 200</b>	<b>52.2</b>

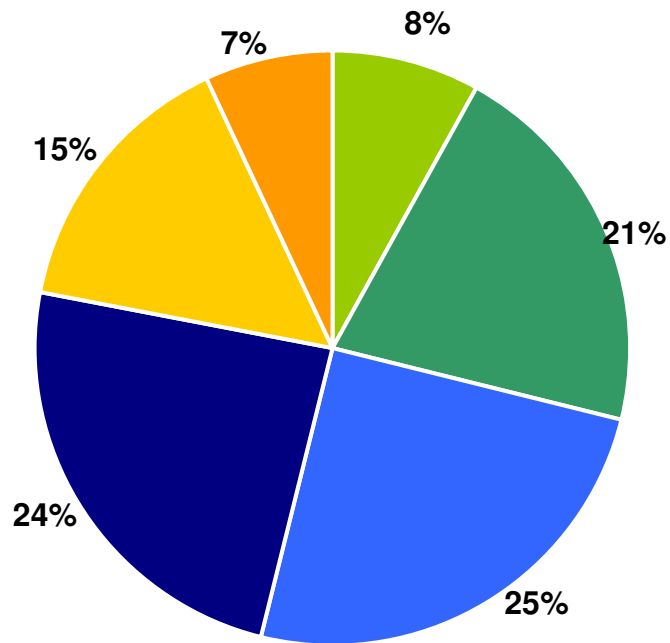
\* Source: Hong Kong Monthly Digest of Statistics (January 2007),  
The Census and Statistics Department



# Respondent Profiles

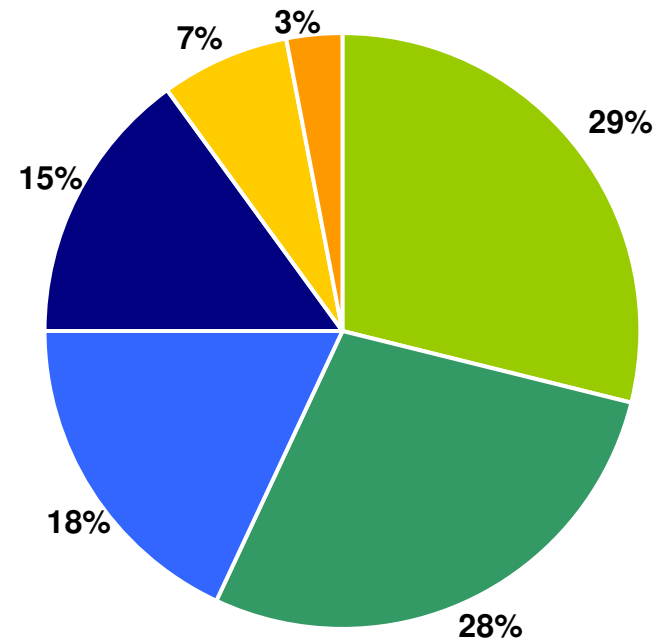
Data is weighted so that the monthly household income follows the actual household income distribution in the Hong Kong population.

### Monthly Household Income (Unweighted)



- HKD 9.999K or below / No Income
- HKD 10 - 19.999K
- HKD 20 - 29.999K
- HKD 30 - 49.999K
- HKD 50 - 79.999K
- HKD 80K or above

### Monthly Household Income (Weighted)



- HKD 9.999K or below / No Income
- HKD 10 - 19.999K
- HKD 20 - 29.999K
- HKD 30 - 49.999K
- HKD 50 - 79.999K
- HKD 80K or above



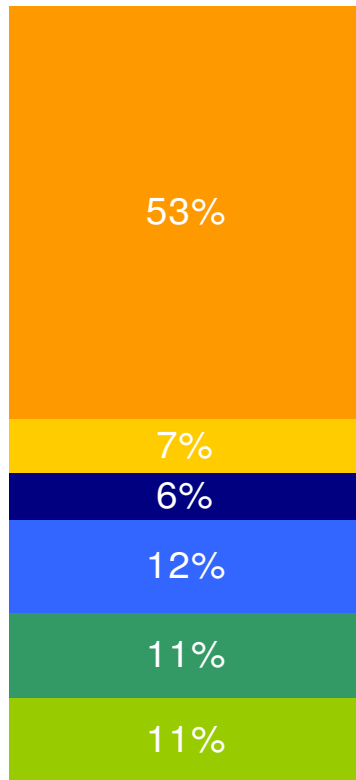
## Monthly Household Income in Hong Kong (2006 Q3)

Monthly household income (HKD)	Total	
	Number of households	%
< 4,000	184 600	7.9%
4,000 - 5,999	136 100	5.9%
6,000 - 7,999	167 400	7.2%
8,000 - 9,999	175 700	7.6%
10,000 - 14,999	372 000	16.0%
15,000 - 19,999	288 200	12.4%
20,000 - 24,999	247 300	10.6%
25,000 - 29,999	168 200	7.2%
30,000 - 39,999	229 300	9.9%
40,000 - 49,999	119 900	5.2%
≥ 50,000	233 400	10.1%
<b>Total</b>	<b>2 322 100</b>	<b>100.0%</b>

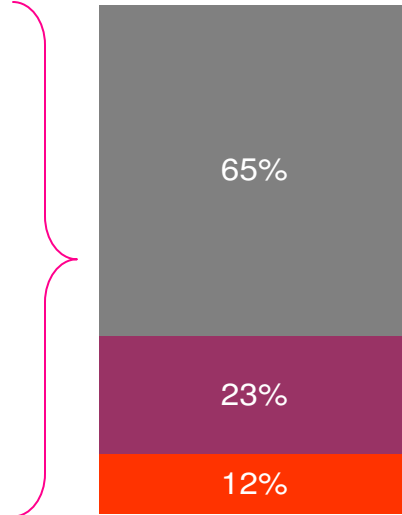


# Respondent Profiles

## Occupation (Weighted)



- Working Full Time - Employee
- Working Full Time - Self Employed
- Working Part Time
- Unemployed/retired
- Student
- Housewife



- Business Sector
- Non-Business Sector
- Others

The following industries are defined as “Business Sector”:

- IT
- Accounting
- Admin/ Clerical
- Airline
- Banking & Finance
- Business Analysis / Development
- Health & Beauty
- Insurance
- Logistics
- Manufacturing
- Marketing & PR
- Media
- Retail
- Service: Catering
- Service: Hotel & Tourism
- Trading
- Transportation

The following industries are defined as “Non-Business Sector”:

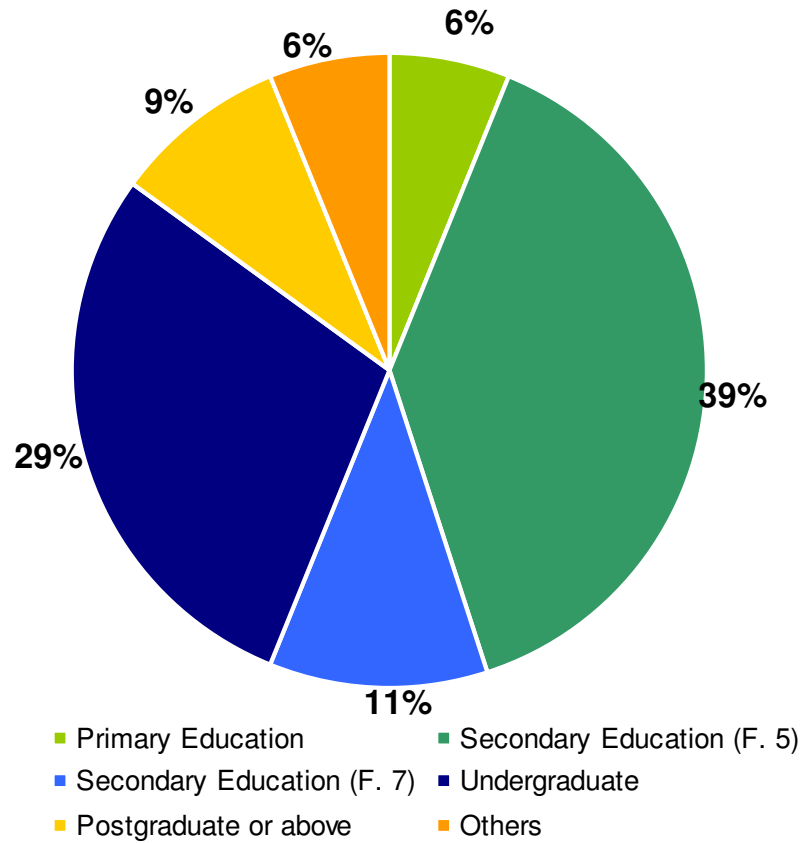
- Education
- Arts and Entertainment
- Engineering
- Government
- Legal
- Medical / Pharmaceutical
- University Academics





# Respondent Profiles

## Education Level (Weighted)



# General Public's Concern towards Environmental Problems



# Concern towards Environmental Issues

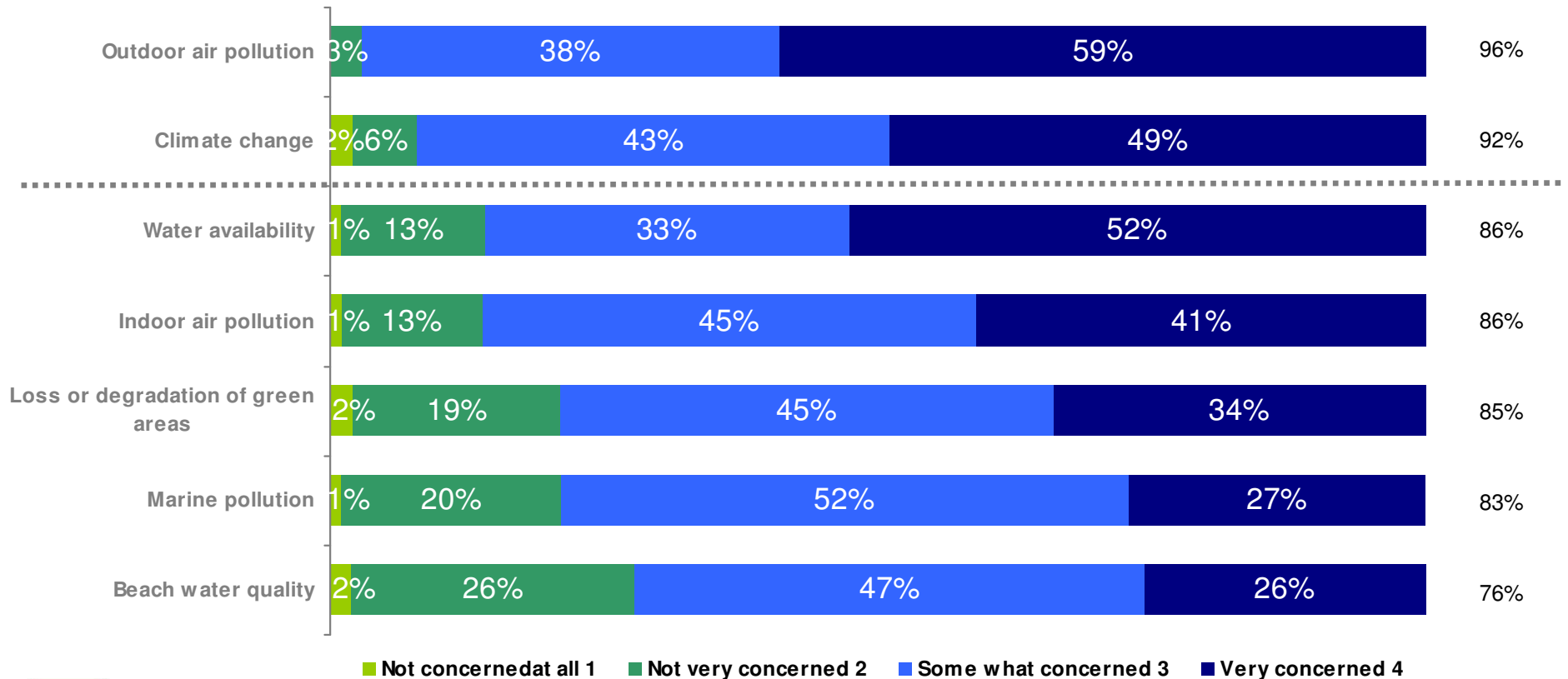
More than 9 out of 10 Hong Kong residents are concerned about outdoor air pollution and climate change.

These two environmental issues are ranked the top two among all other environmental issues listed in the survey.

More than 50% of respondents are very concerned about water availability.

## Are you concerned about the following issues?

Somewhat + Very concerned





# Business Sectors' Concern

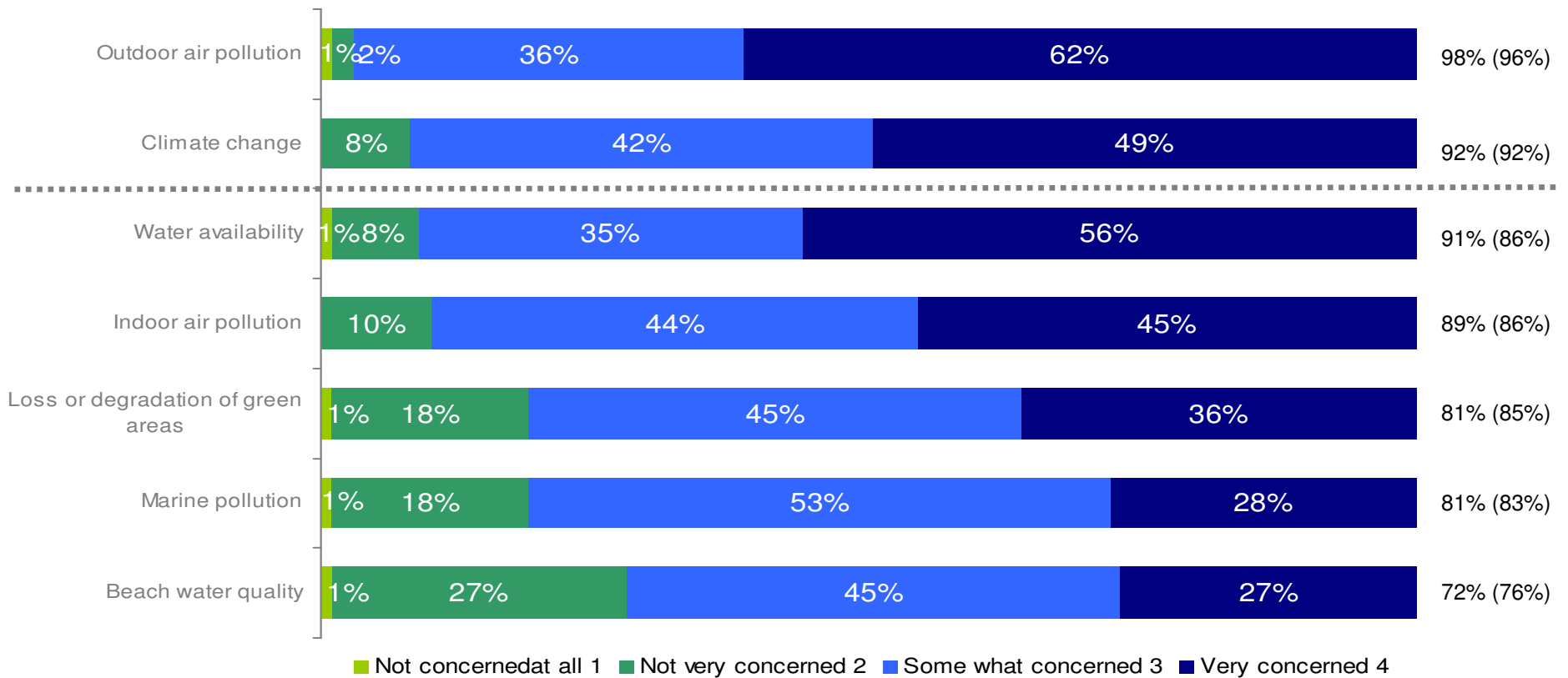
Nearly all respondents working in business sectors are concerned about outdoor air pollution.

More than 90% of them are concerned about climate change.

Respondents are concerned about outdoor air pollution and climate change more than other environmental issues.

## Are you concerned about the following issues?

Somewhat + Very concerned



Base (Weighted): Respondents working in business sectors (n=430)  
Source: Q1

\* Percentages of total respondents who are somewhat or very concerned with the issues are shown in brackets.

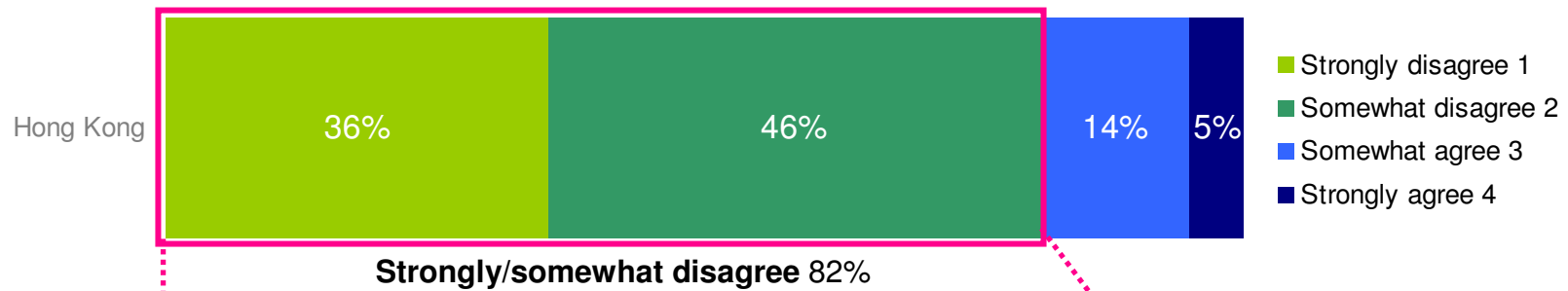


# Climate Change in Hong Kong

82% of respondents disagree that Hong Kong is quite safe from the impact of climate change.

However, this percentage is smaller than the world average in 2006 in which 90% of people believe that global warming is serious.

## Hong Kong is quite safe from the impact of climate change.



## How serious do you consider global warming to be? \*



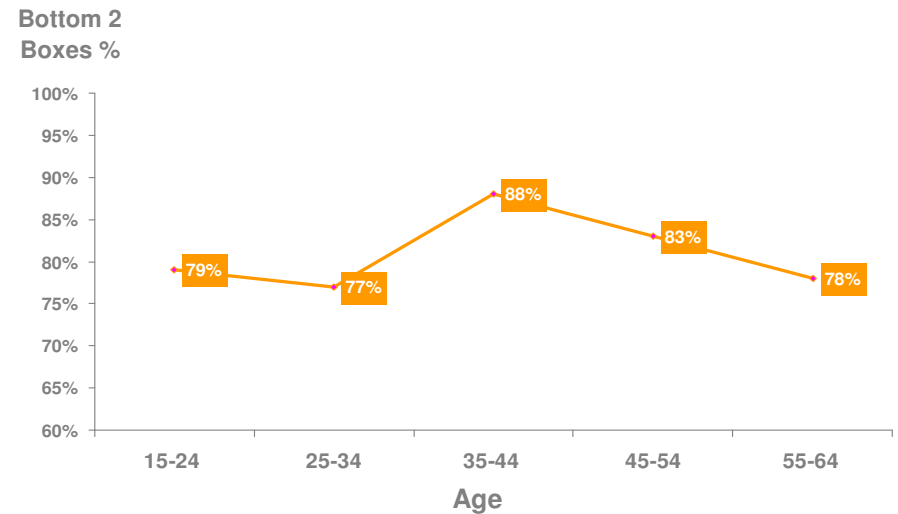
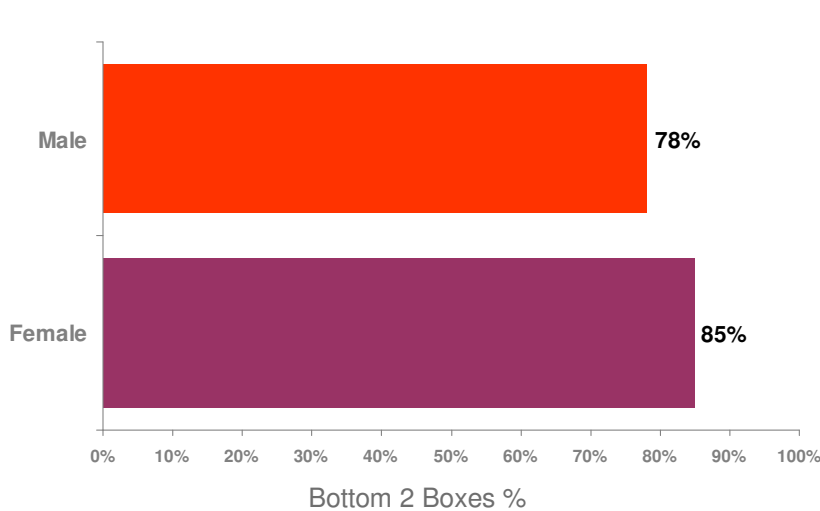
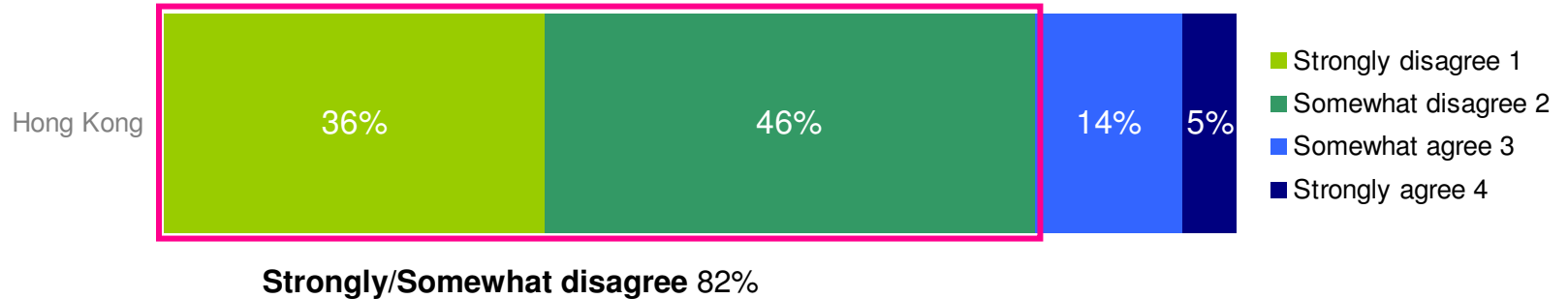


# Climate Change in Hong Kong

More female respondents disagree that Hong Kong is quite safe from the impact of climate change compared with male respondents.

More middle-aged respondents have the same belief compared with younger or older respondents.

## Hong Kong is quite safe from the impact of climate change.



Base (Weighted) \* : Male (n=472); Female (n=531); Age 15-24 (n=180); 25-34 (n=209); 35-44 (n=247); 45-54 (n=236); 55-64 (n=133)

Source: Q14B

\* Sum of number of respondents from different age groups is 1005 which is different from all respondents (1003) due to round-off error after data is weighted.



# General Public's Awareness and Knowledge of Air Pollution

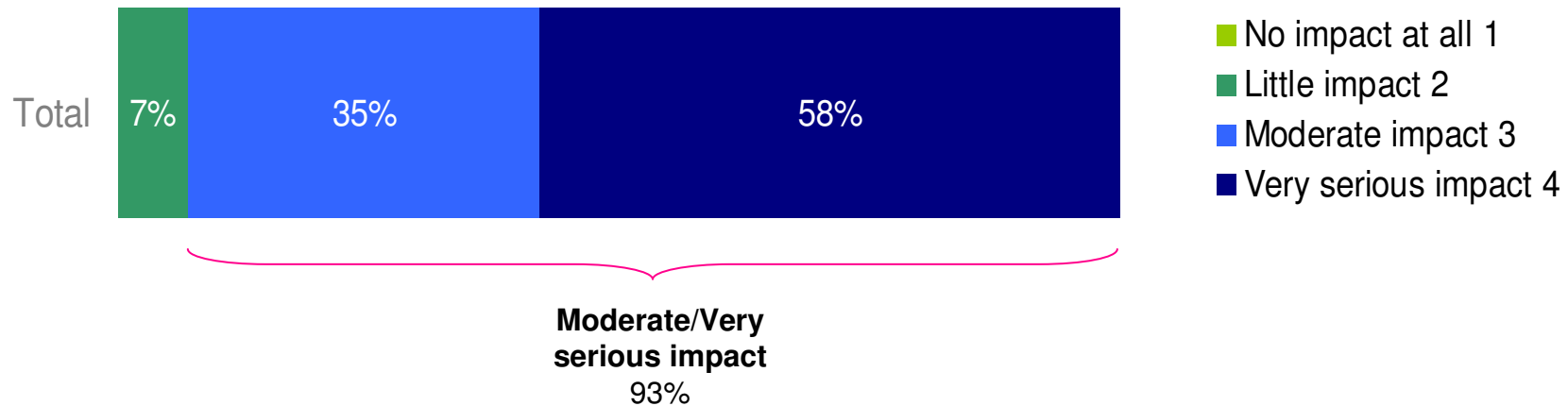


# Impacts on Health on From Outdoor Air Pollution

More than 9 in 10 Hong Kong residents believe that they suffer from outdoor air pollution.

Nearly 60% of respondents believe that they suffer very serious impact from the poor air quality.

To what extent do you think outdoor air pollution impacts your health?





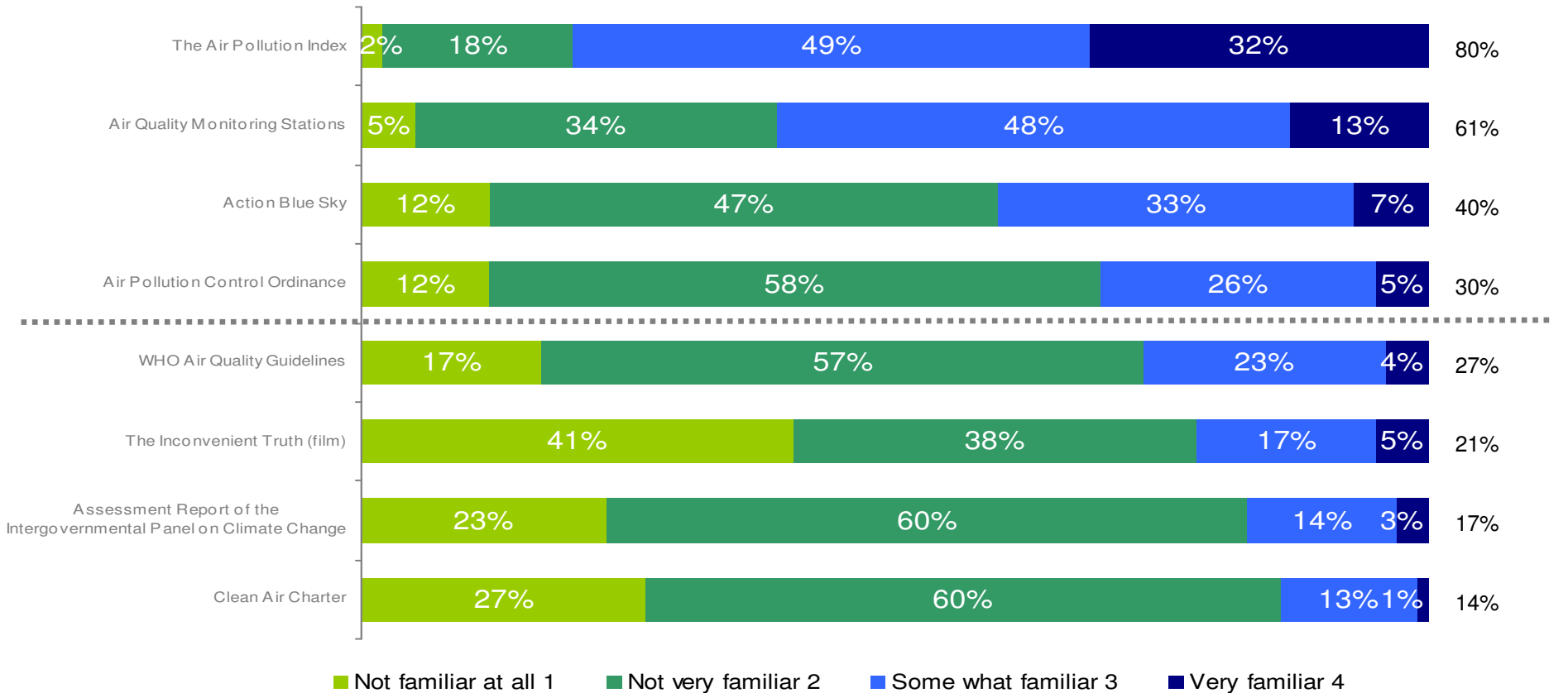
# Familiarity with Initiatives Concerning Air Pollution

80% of respondents are familiar with The Air Pollution Index.

However, respondents are not too familiar with other initiatives raised by government officials or bureaus.

Are you familiar with the following initiatives?

Somewhat + Very familiar





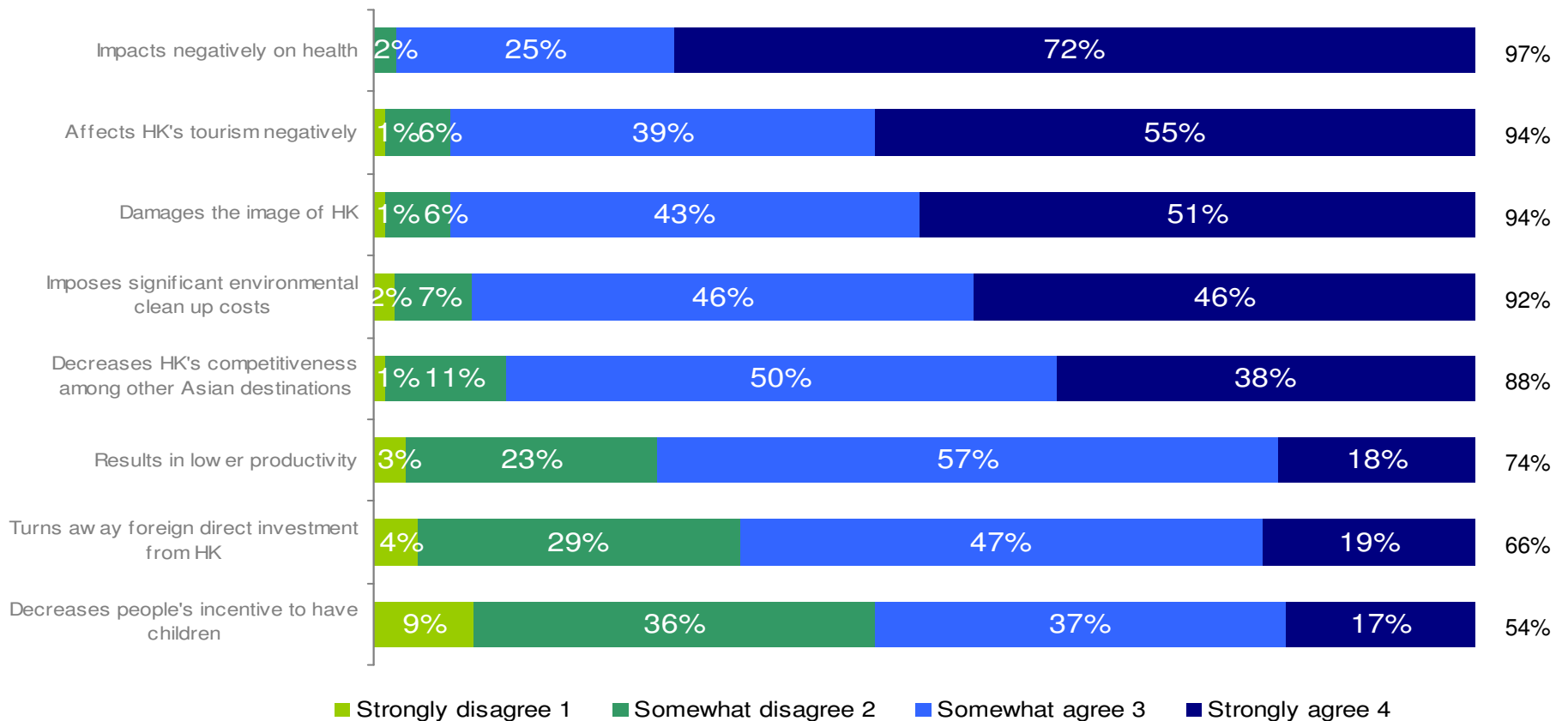
# Consequences of Air Pollution

Most respondents believe that air pollution leads to various negative consequences.

More than 90% of respondents agree that air pollution not only negatively impacts health, it also affects Hong Kong's tourism image.

## Do you agree with the following consequences of air pollution?

Somewhat + Strongly agree





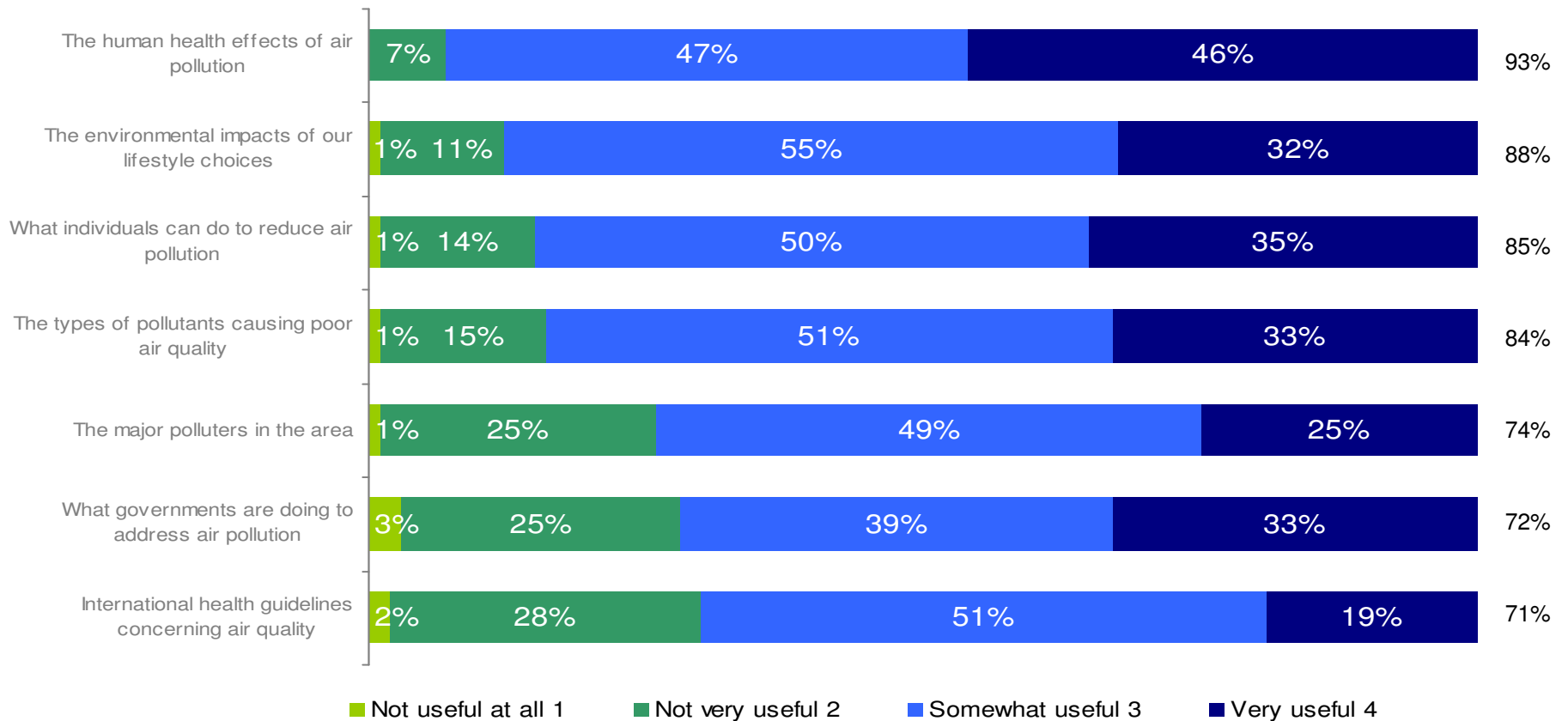
# Usefulness of Information about Air Pollution

Most respondents believe that information concerning human health effects of air pollution will be somewhat or very useful for them to know.

Information concerning individuals' actions will be more useful for respondents to know compared with other information such as type of pollutants causing air pollution, major air polluters, and so on.

### Would the following information about air pollution be useful for you to know?

Somewhat + Very useful



# Relationship between Air Pollution and Climate Change



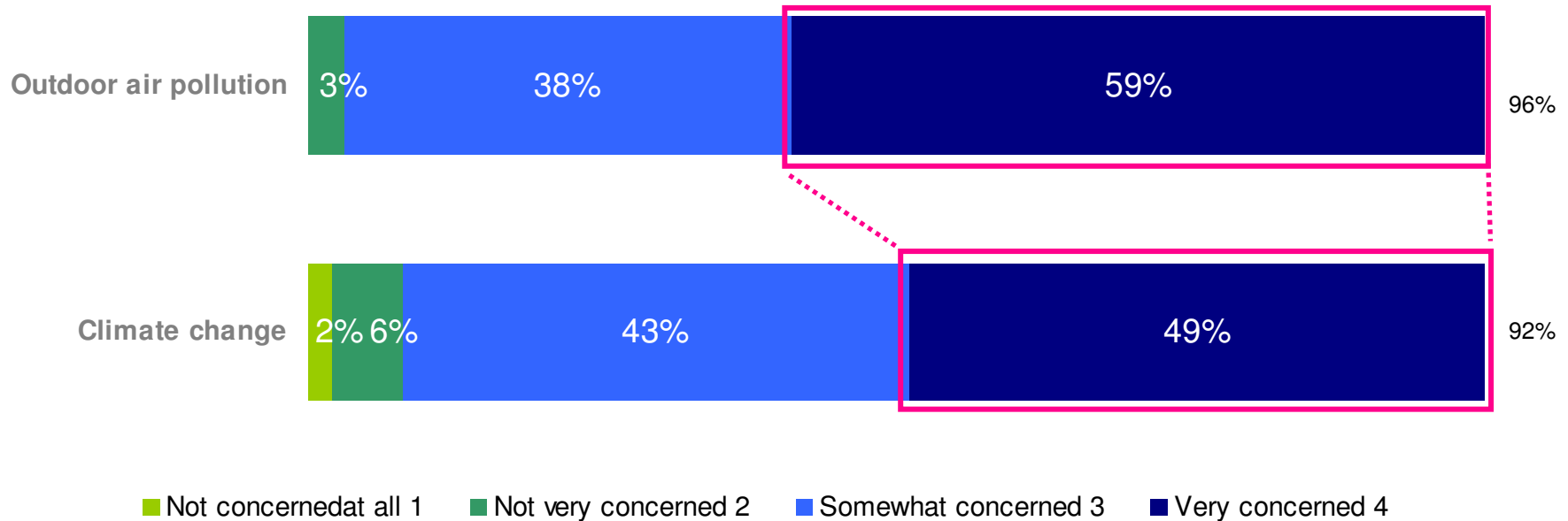
# Concern towards Environmental Issues

59% of respondents are very concerned with outdoor air pollution. However, only 49% of respondents are very concerned with climate change.

The level of concern of outdoor air pollution is higher than that of climate change. There is greater urgency for outdoor air pollution.

## Are you concerned about the following issues?

Somewhat + Very concerned





# Issues Recalled Concerning Climate Change & Global Warming

More than 30% of respondents spontaneously relate climate change with global warming.

However, a low percentage of respondents spontaneously recall air pollution when discussing climate change or global warming.

**What comes to your mind when you hear about the following environmental problems? \***

## Climate Change

Sample Size	1003
Global Warming / Temperature increase	31%
Abnormal weather conditions	19%
Greenhouse Effect	14%
Air pollution (e.g. increasing emission of carbon dioxide)	10%
Disease/ health problems	8%
The world comes to the end	7%
Natural disasters (e.g. tsunami, flooding, drought, earthquake, etc.)	6%
Iceberg melting, raising the water line and submerge many areas	5%
Pollution to the environment	4%
Change in ecosystem	3%
Extinction of animals/ plants	3%
Others	3%
None	13%

## Global Warming

Sample Size	1003
Global Warming / Temperature increase	24%
Iceberg melting, raising the water line and submerge many areas	22%
Abnormal weather conditions	9%
Natural disasters (e.g. tsunami, flooding, drought, earthquake, etc.)	9%
Greenhouse Effect	6%
The world comes to the end	6%
No winter/ shorten the winter time	6%
Air pollution (e.g. increasing emission of carbon dioxide)	4%
Extinction of animals/ plants	4%
Thinning of the ozone layer	4%
Disease/ health problems	3%
Pollution to the environment	3%
Extinction of human beings	3%
Electricity consumption	3%
Pollution (unspecified)	3%
Others	3%
None	10%



Base (Weighted): All respondents (n=1003)  
Source: Q11, Q12

\* Spontaneous mentions.

\*\* Percentages less than 3% are not shown.



# Issues Recalled Concerning Climate Change & Global Warming

When talking about climate change, more female respondents recall air pollution than males.

Older respondents have better recall about air pollution when talking about climate change than younger respondents.

Moreover, less educated respondents and respondents working in business sectors recall air pollution when talking about climate change.

## How many people can recall air pollution when talking about the following issues?

	Total	Gender		Age *					Education **		Sectors **	
		Male	Female	15-24	25-34	35-44	45-54	55-64	F.7 or below	University or above	Business sector	Non-business sector
<i>Sample Size * (Weighted)</i>	1003	472	531	180	209	247	236	133	646	296	430	150
Climate Change	10%	7%	13%	6%	9%	8%	14%	15%	12%	8%	8%	11%
Global Warming	4%	5%	4%	6%	4%	3%	5%	4%	4%	5%	4%	7%



\* Sum of number of respondents from different age groups is 1005 which is different from all respondents (1003) due to round-off error after data is weighted.  
 \*\* Excluding respondents who chose "Others".

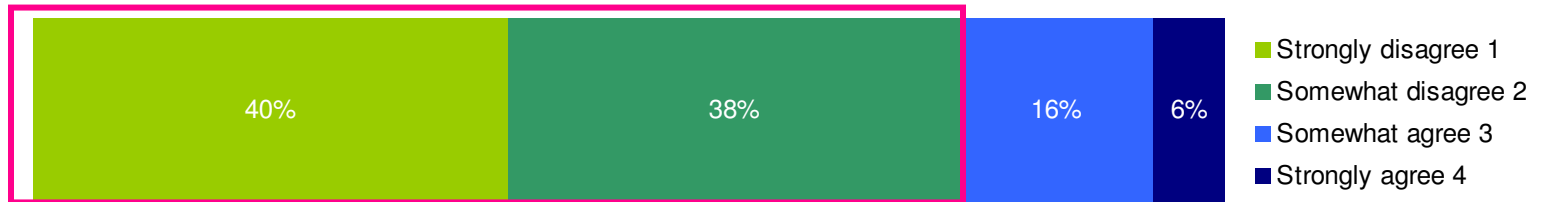


# Relationship between Air Pollution and Climate Change

Although respondents are not familiar with initiatives concerning air pollution and cannot spontaneously recall air pollution with climate change or global warming, 78% of respondents are clear that air pollution and climate change are related when asked.

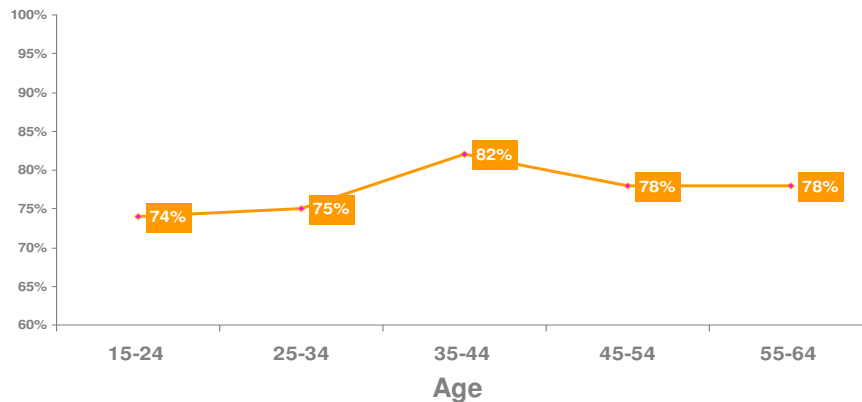
Middle-aged and older respondents tend to believe that air pollution and climate change are not separate issues. Also, respondents with higher monthly household income have a stronger belief that these two issues are not separate.

**Air pollution and climate change are separate issues.**

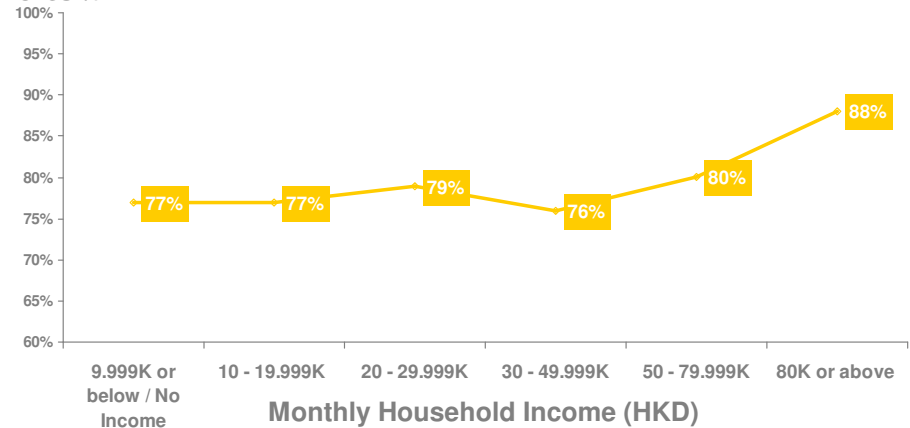


**Strongly/somewhat disagree 78%**

**Bottom 2 Boxes %**



**Bottom 2 Boxes %**



Base (Weighted) \* : Age 15-24 (n=180); 25-34 (n=209); 35-44 (n=247); 45-54 (n=236); 55-64 (n=133); Monthly Household income HK 9.999K or below/ No income (n=291); 10-19.999K (n=281); 20-29.999K (n=181); 30-49.999K (n=150); 50-79.999K (n=68); 80K or above (n=32)

Source: Q14A

\* Sum of number of respondents from different age groups is 1005 which is different from all respondents (1003) due to round-off error after data is weighted.

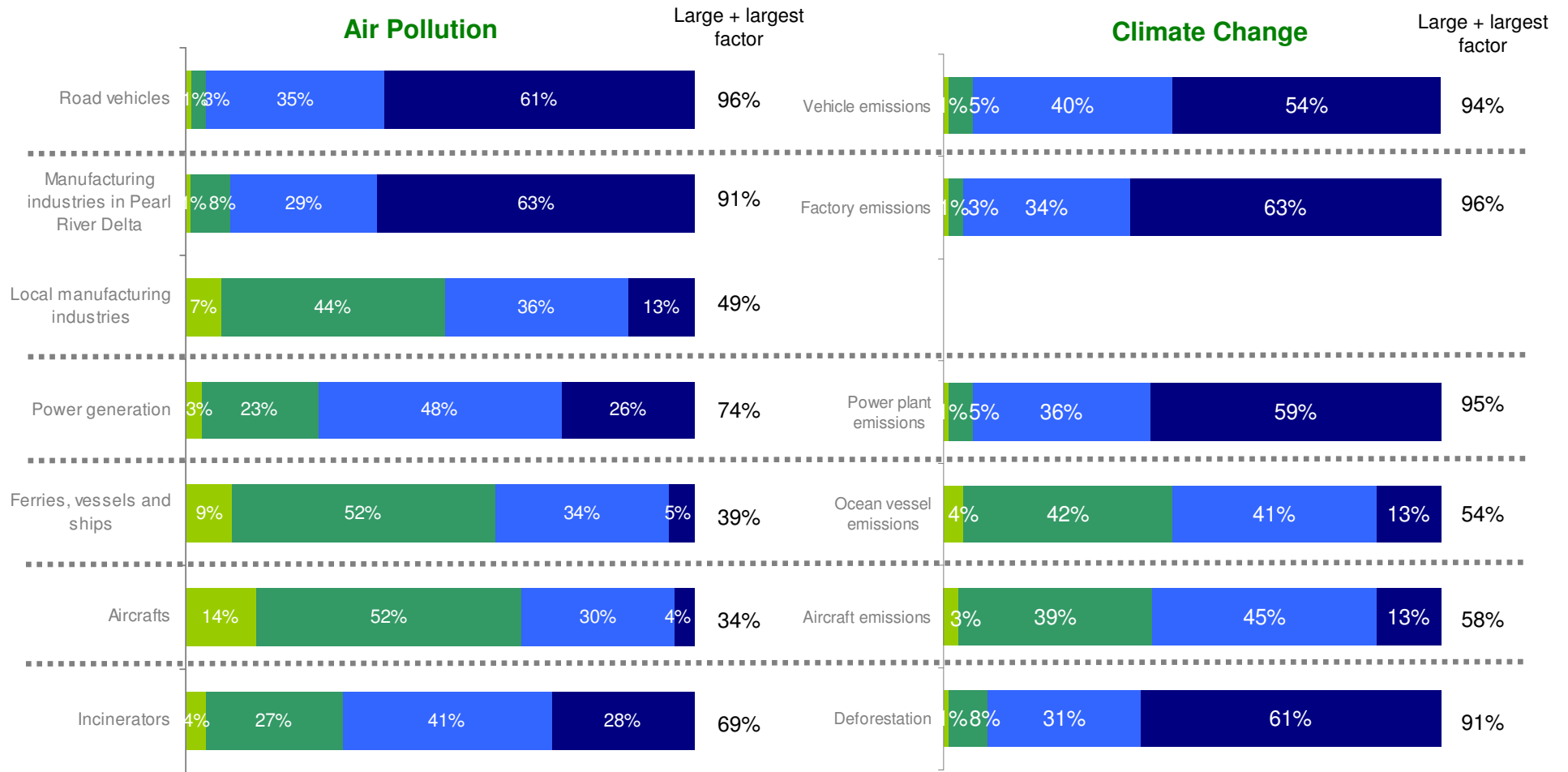




# Contributing Factors to Air Pollution and Climate Change

Most respondents believe that road vehicles, factories, and power plant emissions are major contributing factors to both air pollution and climate change.

Respondents believe that deforestation plays a very large contributing factor in climate change.



■ Least contributing factor 1   
 ■ Small contributing factor 2  
■ Large contributing factor 3   
 ■ Largest contributing factor 4



Base (Weighted): All respondents (n=1003)  
Source: Q3, Q13

# Responsibility of Different Parties towards Environmental Problems

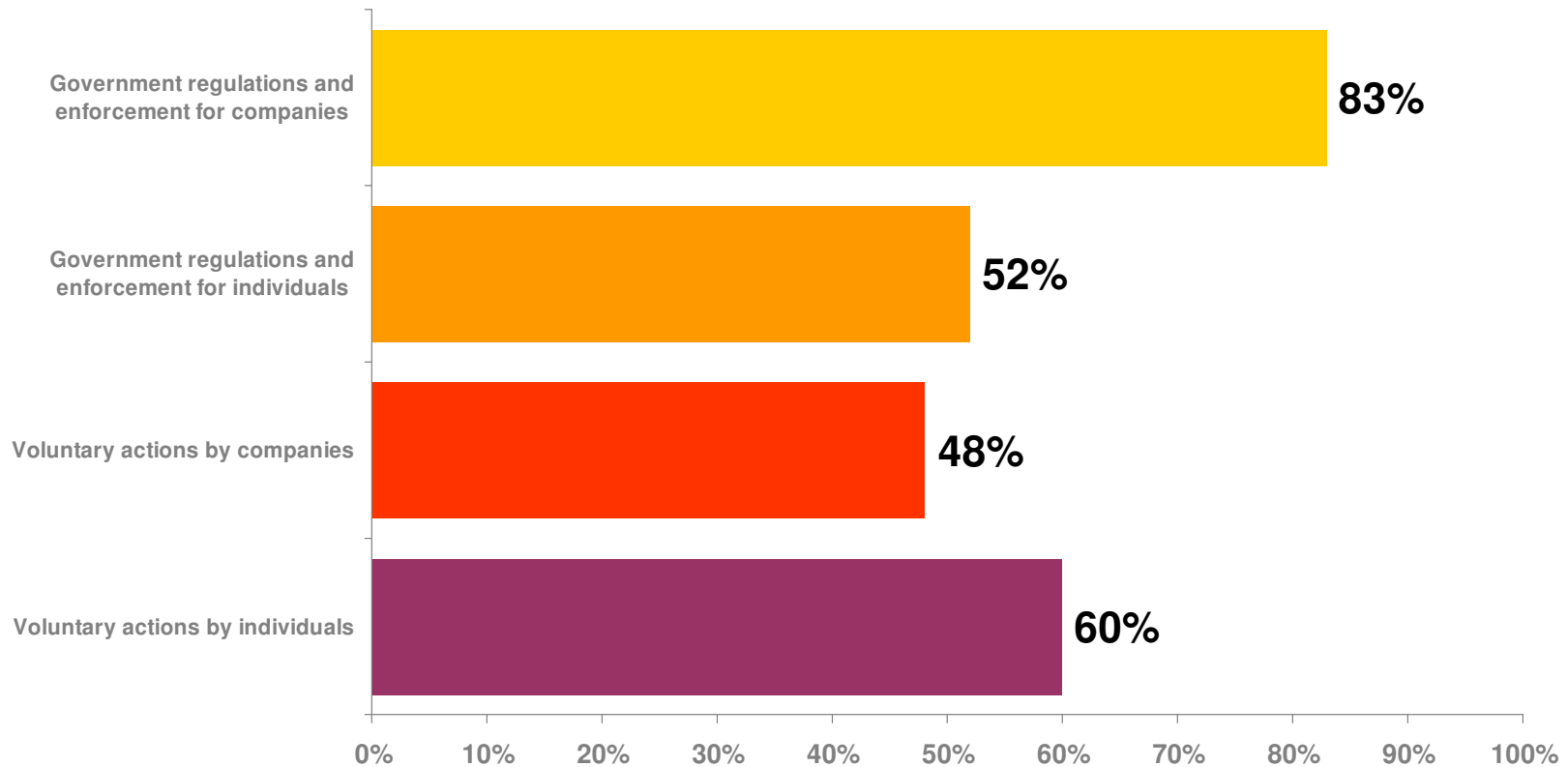


# Effective Measures

83% of respondents believe that government regulations and enforcement for companies are more effective in reducing air pollution.

Only 48% of respondents believe that voluntary actions by companies are effective.

## What approach(es) do you think would be effective in reducing air pollution?



\* Respondents are allowed to give multiple answers.

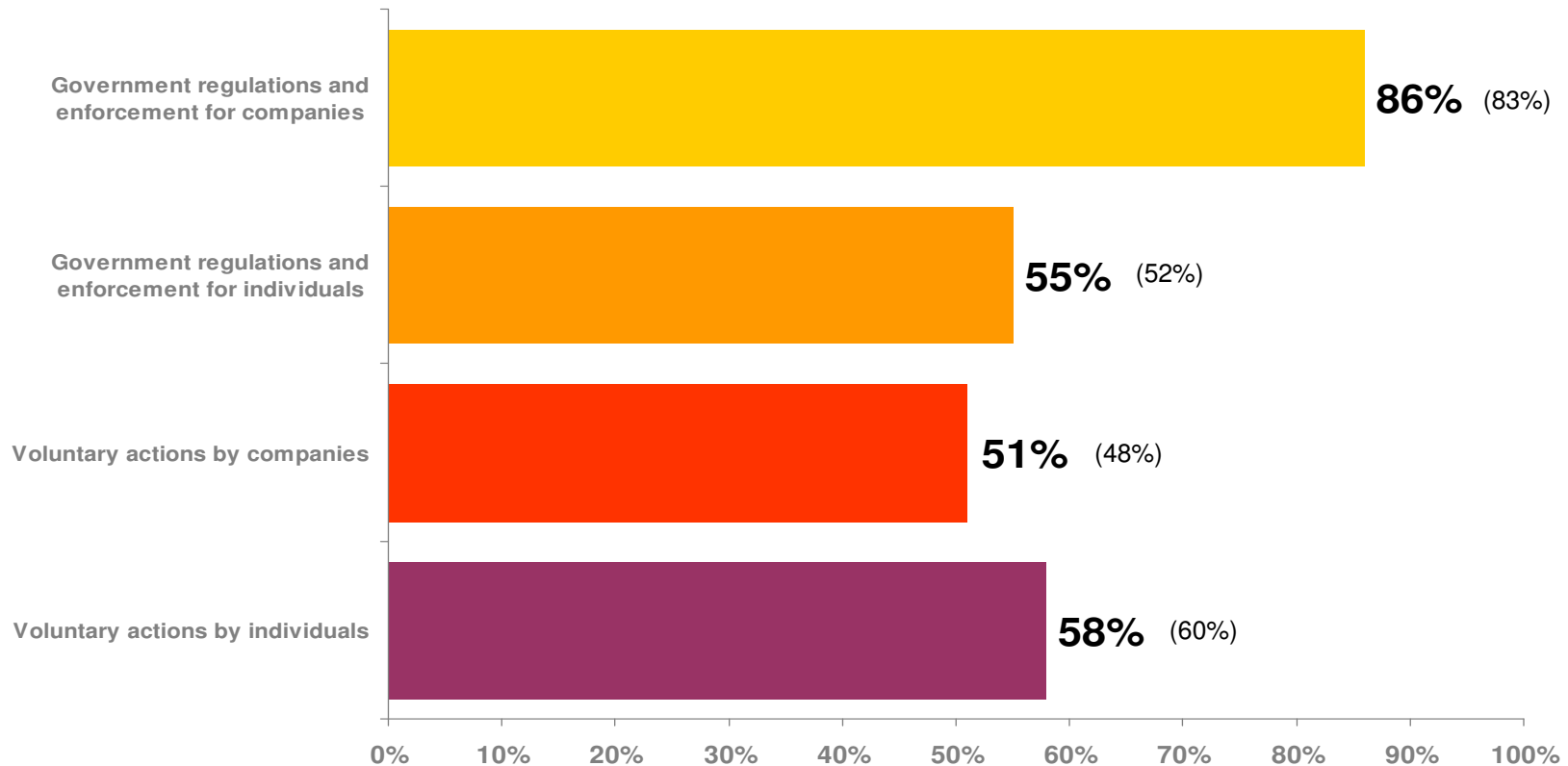




# Effective Measures Considered by Business Sectors

Respondents working in business sectors have similar beliefs with all respondents when talking about which measures are considered to be effective in reducing air pollution.

## What approach(es) do you think would be effective in reducing air pollution?



\* Respondents are allowed to give multiple answers.



Base (Weighted): Respondents working in business sectors (n=430)  
Source: Q8

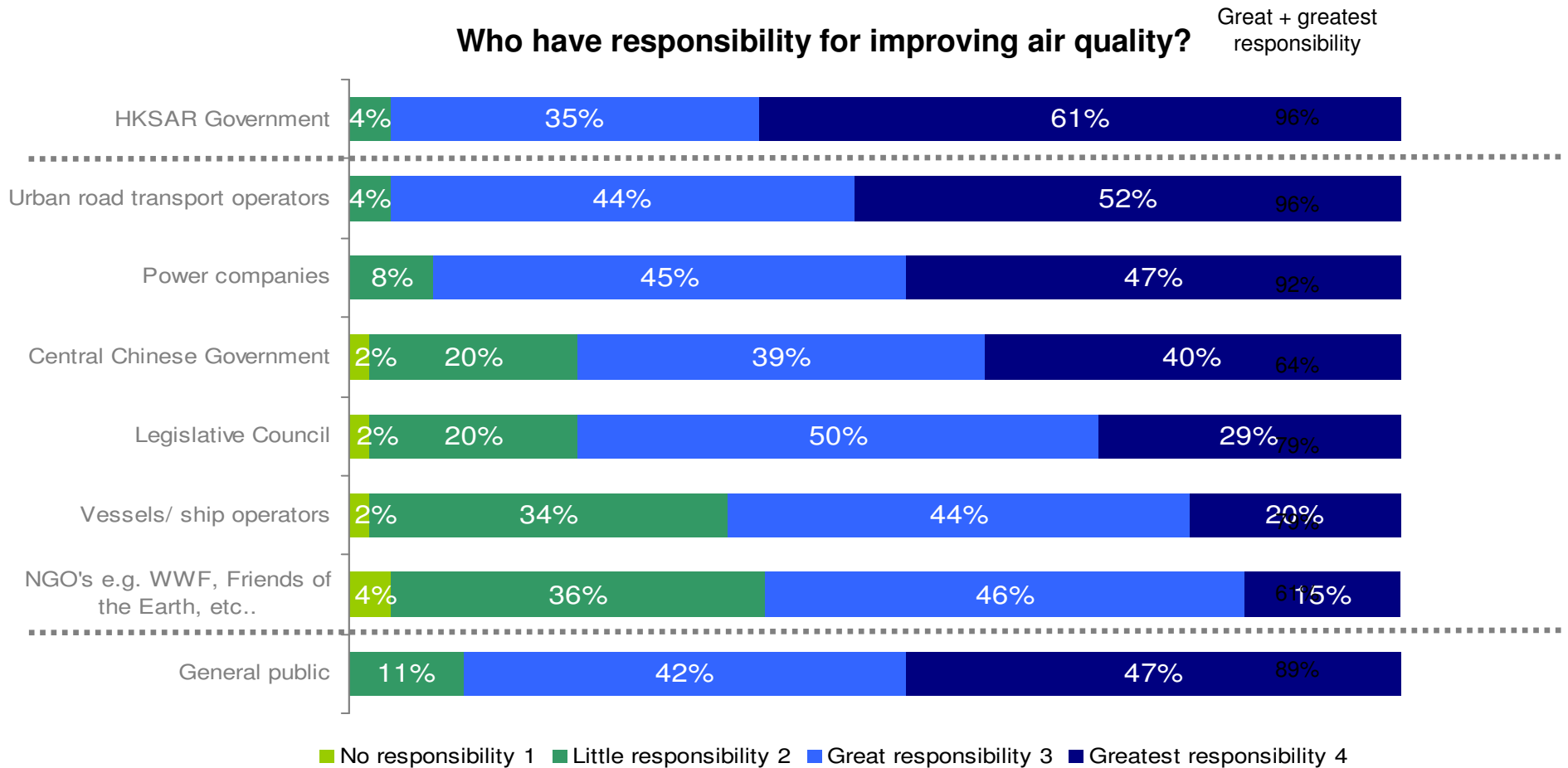
\* Percentages in brackets reflect the opinions by all respondents (n=1003) in the previous page.



# Responsibility for Improving Air Quality

Nearly all respondents believe that the HKSAR Government and urban road transport operators bear a great responsibility for improving air quality. Nearly 90% of them believe that the general public also bears a great responsibility for it.

They believe that NGOs have less responsibility compared with other parties.

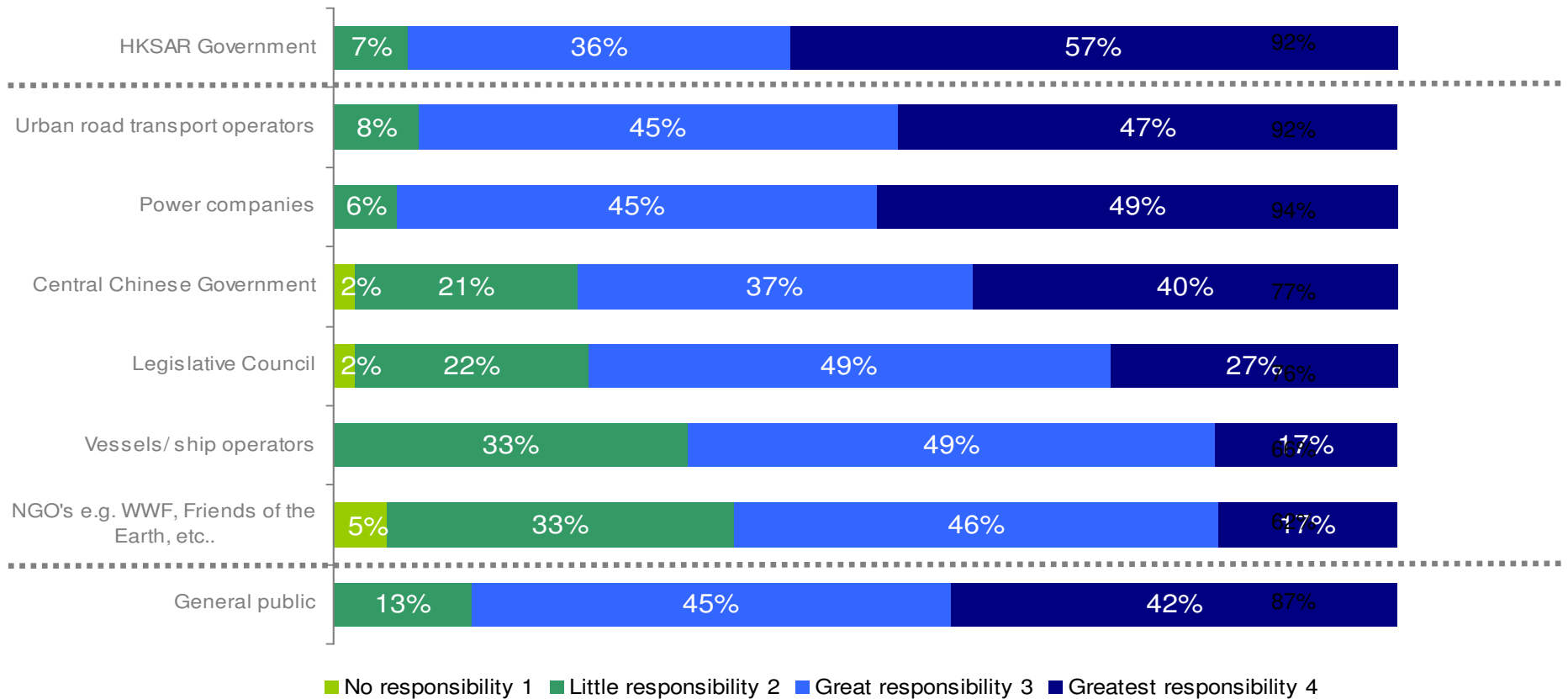




# Responsibility for Tackling Climate Change

A similar trend is observed when discussing the responsibility for tackling climate change, with the HKSAR government being one of the parties which bears most of the responsibility and NGOs bearing less responsibility compared with others.

**Who has responsibility for tackling climate change?** Great + greatest responsibility



# Evaluation of Government Offices



# Responsibility among Government Offices

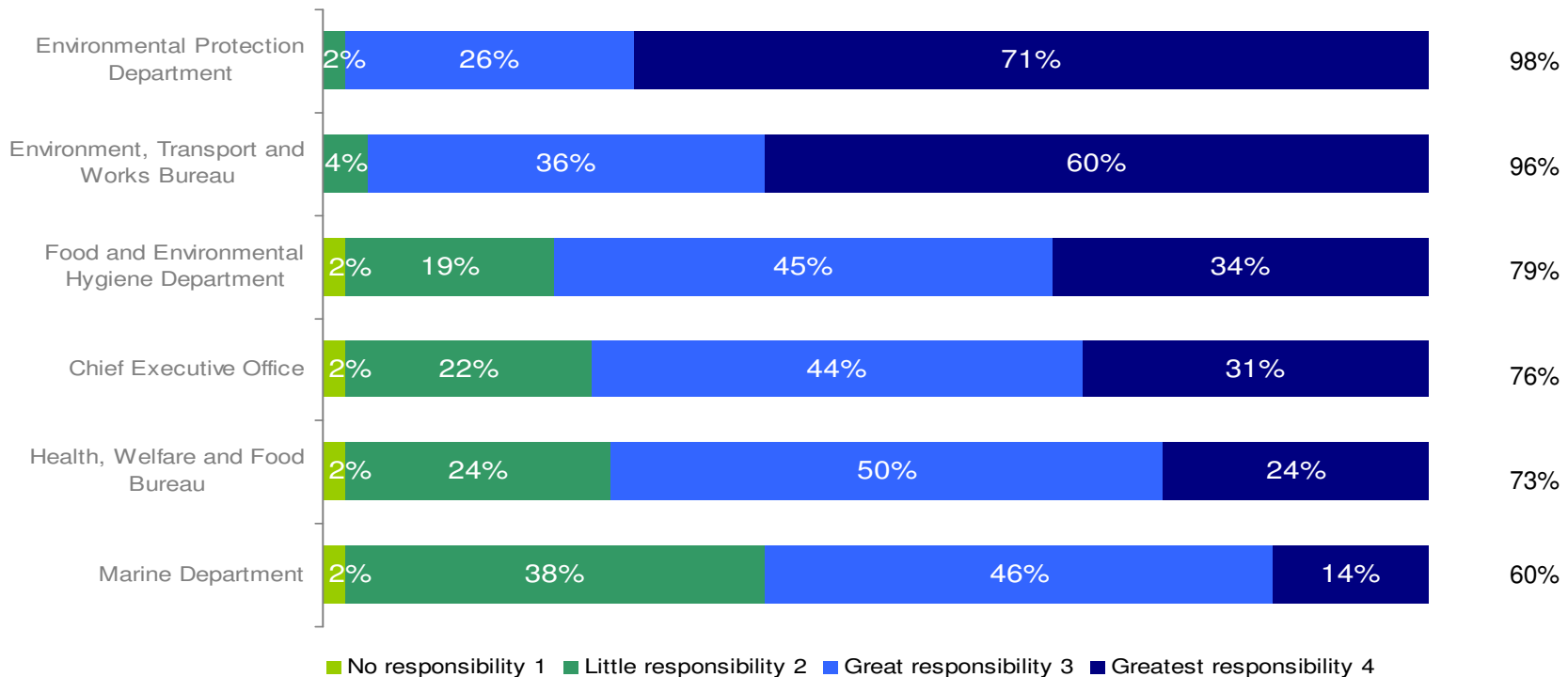
Nearly all respondents (who agree that the HKSAR Government bears a great/the greatest responsibility for improving air quality) believe that among the government offices, the Environmental Protection Department and Environment, Transport and Works Bureau bears a great/the greatest responsibility for improving air quality.

HKSAR Government



Which Government offices have responsibility for improving air quality?

Great + Greatest responsibility



Base (Weighted): Respondents who believe that HKSAR Government bears great/greatest responsibility for improving air quality (n=959)  
Source: Q1

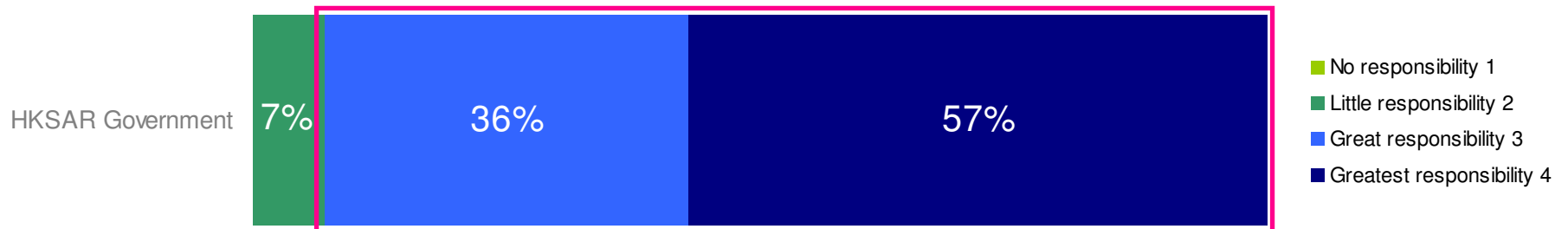


# Satisfaction Level towards Government's Actions

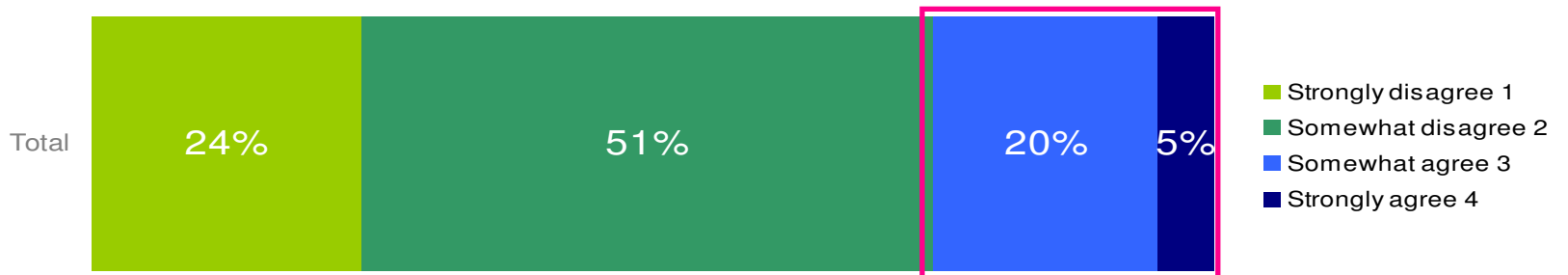
3 out of 4 of Hong Kong locals are very or somewhat unsatisfied with the level of action the HKSAR government takes about climate change while 92% of respondents believe that the HKSAR Government has a great/ the greatest responsibility.

Only 5% of total respondents are very satisfied with the HKSAR Government's actions.

## Who have responsibility for tackling climate change?



## I am satisfied with the level of action the Hong Kong government takes about climate change.



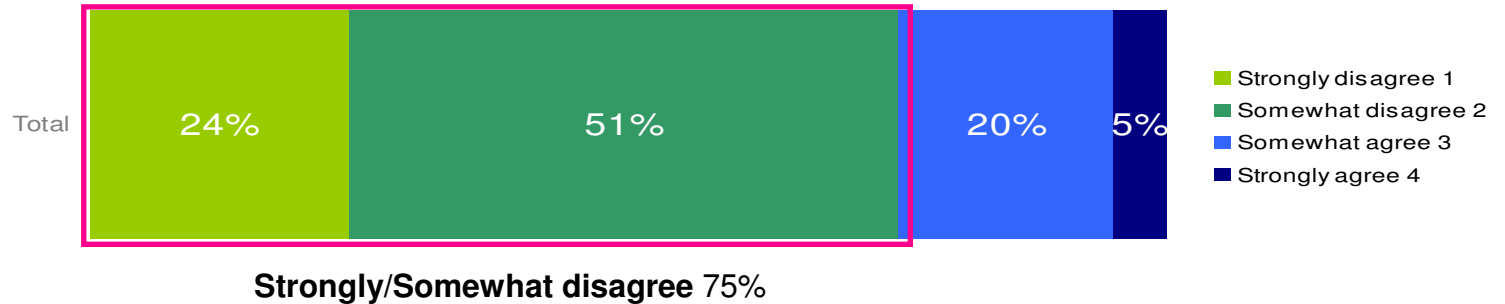


# Satisfaction Level towards Government's Actions

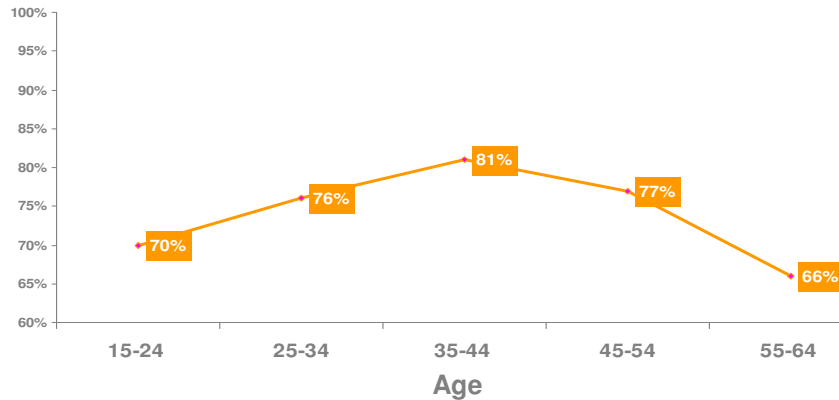
Middle-aged respondents tend to be less satisfied with the level of the HKSAR Government's action about climate change.

Respondents from higher income groups also have lower satisfaction towards the HKSAR Government's action.

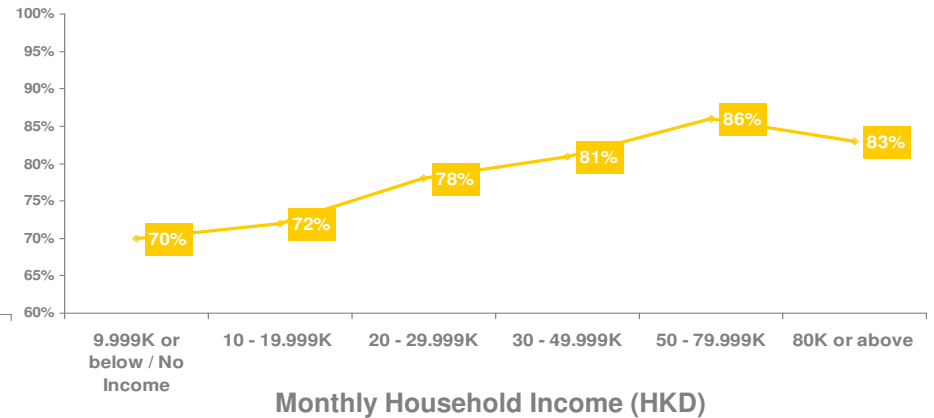
I am satisfied with the level of action the Hong Kong government takes about climate change.



Bottom 2 Boxes %



Bottom 2 Boxes %



Base (Weighted) \* : Age 15-24 (n=180); 25-34 (n=209); 35-44 (n=247); 45-54 (n=236); 55-64 (n=133); Monthly Household income HK 9.999K or below/ No income (n=291); 10-19.999K (n=281); 20-29.999K (n=181); 30-49.999K (n=150); 50-79.999K (n=68); 80K or above (n=32)

Source: Q14D

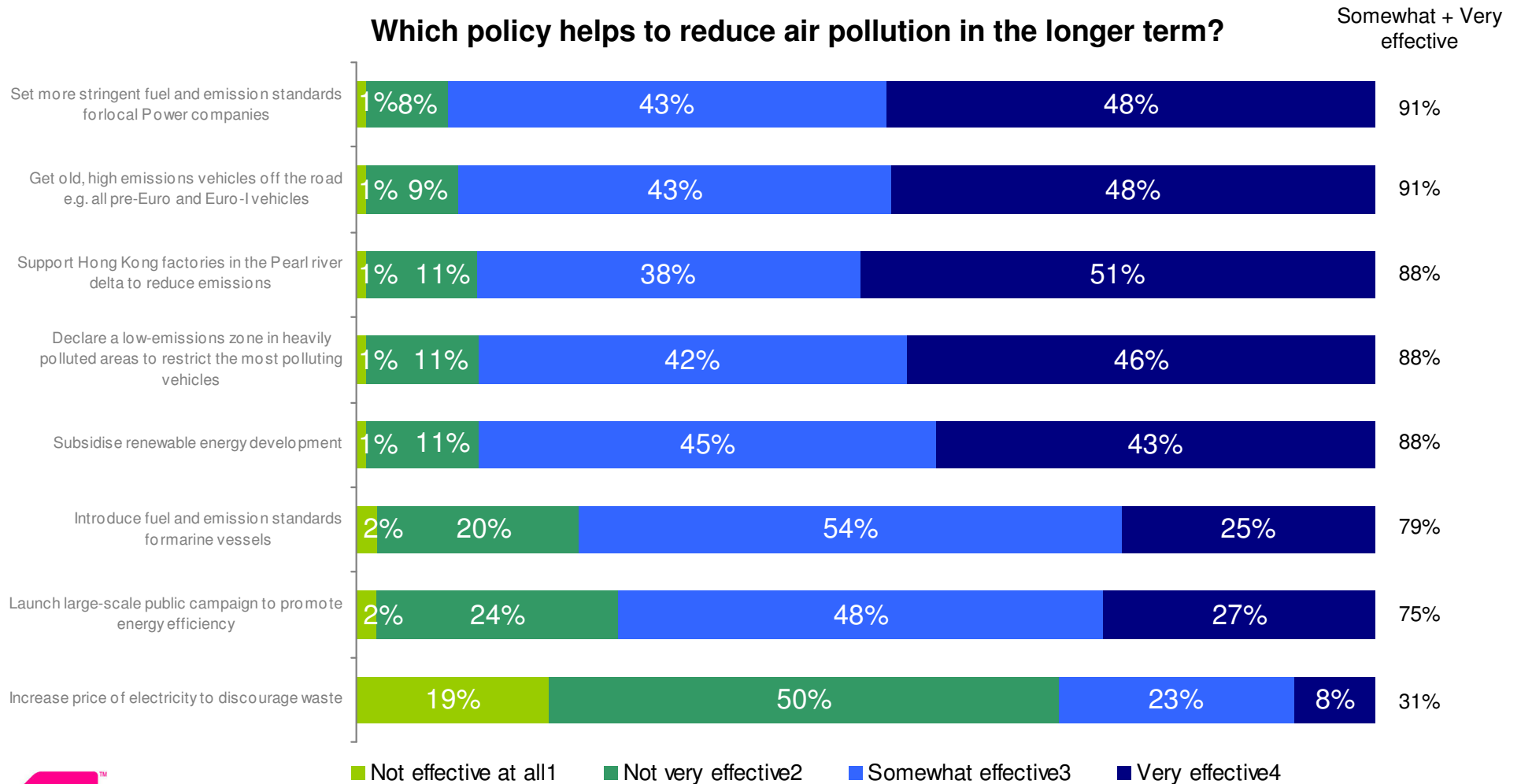
\* Sum of number of respondents from different age groups is 1005 which is different from all respondents (1003) due to round-off error after data is weighted.





# Possible Government Policies

Respondents believe that most government policies can help to reduce air pollution in Hong Kong in the longer term. Comparatively, respondents feel that government policies towards road vehicles, power plants, and factories are more effective than other policies.





the sixth sense of business





## Appendix 1

# *Online methodology: background and FAQs*





## What advantages do *well managed* online access panels offer?

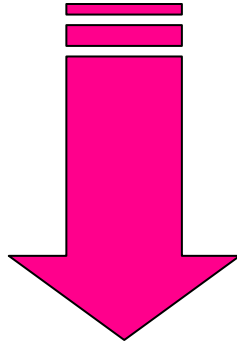
- **High quality research, delivering better research outcomes**
- Reliable and robust surveys, replicable over time
- Fast turnaround, with real-time reporting
- Most cost effective methodology
- Excellent response rates
- Preferred by a large majority of respondents
- No interviewer bias (ideal for sensitive topics)
- Multi-media capabilities
- Large available samples, pre-screened on a wide range of lifestyle, health and consumer topics



**Overall, the most effective and efficient methodology**



6thdimension™



Better research  
outcomes

## Consistent evidence that 6D online studies produce better data and insights

- More accurate market share data
- More realistic intentions to purchase
- More honest answers on sensitive subjects
- Fewer “politically correct” responses
- More detailed open-ended responses
- Better discrimination in brand disposition, imagery, etc
- More accurate recognition (ads, products), using high quality stimulus





## How is the panel recruited ?

- The panel is recruited by a combination of methods, to ensure broad coverage of the on-line population
  
- Electronic direct marketing campaigns, using mainstream databases and communities
  - we avoid special interest communities unless we are looking for a specific demographic or target (eg. mothers with young children)
  
- Respondents from random Face-to-Face or CATI surveys are invited to join
  
- Above-The-Line advertising (usually press)
  
- Referrals from existing members



## Is the panel representative ?

- The panel is designed to produce representative samples of the **online population** in the geographic areas we cover
  
- The achieved samples are controlled to match the target market by:
  - Sampling (the invites sent out)
  - Screening questions
  - Quotas
  
- In Emerging Markets, our panels are **not designed to represent the total population**
  
- In highly developed internet markets, and for specific target groups (eg. MP3 users), the on-line population may be highly representative of the total



## Do people respond differently on-line ?

- On many measures, on-line responses are very similar to other methods
  
- But there can be some important differences in online responses. Typically ...
  - They are more considered (more detailed responses)
  - They are more candid
  - They can be more critical
  - Responses can differ by survey subject
  - Responses can differ for sensitive questions / “politically correct” topics

The End

