



**Chairman and Members of the Panel on Environmental Affairs  
Legislative Council  
Legislative Council Complex,  
1 Legislative Council Road,  
Central, Hong Kong**

**By Email Only**

18 April 2012

Dear Legislators,

**Meeting to discuss the Environmental and Social Impacts**

**in relation to the airport expansion on 23 April 2012**

Thank you for arranging this special Environmental Affairs Panel meeting responding to the letter of request dated 16 February 2012 from Greenpeace and WWF. Our call was a result of the public opinion poll conducted by the University of Hong Kong showing that 73 percent of respondents think that it is important for the government to take environmental and social costs into account when considering a third runway option. The findings are in contrast to the Airport Authority Hong Kong (AAHK)'s summary of its consultation findings, which states that 73% of the Hong Kong public support a third runway.

The third runway project is going to be the most expensive infrastructure project in Hong Kong's history, however no comprehensive assessment based on science has been made to evaluate the environmental impacts and social costs of this project following the principles of sustainable development and proven best practices overseas. We stress that such an assessment has to be made BEFORE the Environmental Impact Assessment (EIA) process because many of these impacts are currently NOT covered by the EIA and that NOT all environmental impacts can be mitigated. This project could bring serious and irreversible impacts with potentially far-reaching implications to Hong Kong's overall environment and living quality. We cannot blindly assume all impacts can be mitigated and dealt with them at the EIA stage. Making a fair and initial assessment of what environmental and social impacts this third runway project could bring is absolutely essential to ensure Hong Kong makes the right choice.

The undersigned environmental groups do not oppose development, but this city needs to keep abreast with the best practices elsewhere in ensuring that large development projects do not seriously threaten the living environment of the citizens. It is risky and irresponsible for Hong Kong to go ahead with the

third runway project with this big unknown and regret it 10 years later. For impacts assessed to be beyond any compensation or the current scope of mitigation available in our EIA system, Hong Kong must look into other possible measures to avoid or address those impacts before a decision on the expansion option is made. Conducting a Social Return on Investment (SROI) exercise for large infrastructure projects, such as the third runway, was supported by all three Chief Executive Election Candidates at the environmental policy forum on 3 March 2012. We hope such support will be turned into a real practice in Hong Kong, starting with this massive project.

### **I. Carbon emissions from aviation have not been addressed by AAHK and will not be addressed in the EIA process**

The public opinion poll commissioned by WWF and Greenpeace indicated that the public were asked by AAHK to give their opinion without being presented all the important facts in relation to the airport expansion options. In particular, while carbon emissions from air traffic growth were a concern, 44.8 percent did not know whether carbon emissions were among the environmental issues that had been addressed by the AAHK in their third runway consultation, while 37.9 percent were correctly aware that the issue had not been addressed. Almost half of the respondents believe that the current EIA process will address increased carbon emissions brought by the new runway, which is incorrect. Greenhouse gases are not included under the EIAO at this time.

### **II. Hidden Costs yet to be Addressed**

The overwhelming percentage (near 80%) of respondents, supported consideration being given to the hidden costs of carbon emissions. AAHK should not avoid responsibility for future increases in aviation emissions and discussion on their potential costs. Australia has already imposed a carbon tax on the aviation industry. The European Union has applied the Emission Trading Scheme to Hong Kong airlines. China is also considering imposing a carbon tax. In total, the estimated carbon tax to be imposed on could range up to HK\$59 billion for the next 20 years (Year 2008-2030).

The environmental Impacts currently not covered by EIA and major social impacts currently not measured for the construction of a third runway are listed in **Appendix I**.

To learn more about SORI, please view this video produced by WWF at: <http://youtu.be/wxrdpl--xHE>

### **III. Our asks to Legislators**

The figures of this new poll demonstrate that in fact there are deep-seated public concerns on the runway's environmental and social impacts that are not currently being addressed, but which need to be. In fact, the Airport Authority Hong Kong's own consultation findings also note many concerns on aviation emissions and environmental and social costs, but to date they have been ignored by AAHK.

AAHK has refused to provide an estimation of the total carbon emissions to be generated by the third runway option despite repeated urges. WWF has requested for the monthly data of the local

greenhouse gas emissions generated from flying and local airport facilities from 2007 – 2011 but AAHK has provided us only the flight data of a one-week period which is insufficient to make sound estimation. This has demonstrated AAHK's lack of will and commitment in carbon reductions for this so-called "greenest" airport in the region.

1. The Legislative Council should demand that AAHK and the Government do not proceed straight to the statutory EIA process, unless the increase in carbon emissions facilitated by the two expansion options are clearly quantified and released for debate.
2. The Legislative Council should demand 1) the monthly data of the local greenhouse gas emissions generated from flying and local airport facilities from 2007 – 2011, 2) the monthly flight data by country and city from and to Hong Kong with detailed breakdown in passengers number and travel distance for the same period mentioned above, 3) the annual projection on demand with flight details and passengers number of the existing operation from 2012 – 2030 as well as 4) the annual estimation of additional emissions generated from the third runway. Such information will be useful for Hong Kong to have understanding of the overall carbon emissions to be generated by the third runway.
3. The Legislative Council should ask the project proponent, AAHK, to conduct a Social Return on Investment (SROI) study, which would include social and environmental costs and reveal the full economic impacts of a third runway, before making any decision on whether to proceed with planning a third runway.
4. The Legislative Council should call on the Hong Kong government to address the considerable public concerns over reclamation and carbon emissions, and impacts on Chinese white dolphin, on fisheries and on the whole of society from a potential third runway.
5. A second consultation and in-depth public debate should be conducted on the findings of a SROI study revealing all potential costs of aviation carbon emissions as well as other environmental and social costs before Hong Kong spends more than a hundred million dollars on a massive EIA. A third runway is a megaproject with major environmental and social impacts, some of which may not be possible to mitigate, and we simply don't have enough information at this time to understand its full implications, and make a well-informed decision for Hong Kong.

### **WWF and Greenpeace's Public Opinion Survey**

Funded and commissioned by WWF and Greenpeace in Hong Kong, this public poll was conducted by the Public Opinion Programme of the University of Hong Kong from 13-16 January 2012, who interviewed 1,001 Cantonese-speaking Hong Kong residents aged over 18. According to the poll's findings, respondents expressed concerns about various environmental issues: reclamation (68%), the Chinese White Dolphin (65%), carbon emissions from growth in air traffic (63%), and fisheries (58%).

The poll also indicated that the public were asked to give their opinion without being in possession of all the facts. In particular, while carbon emissions from air traffic growth were a concern, 44.8 percent did

not know whether carbon emissions were among the environmental issues that had been addressed by the AAHK in their third runway consultation. 37.9 percent were correctly aware that the issue had not been addressed. Detailed findings of the survey are enclosed in **Appendix II** for your reference.

Thank you for your attention.

Yours Truly,

A handwritten signature in black ink, appearing to read 'William Yu', with a stylized flourish at the end.

Dr. William Yu

Acting Deputy Director of Conservation, WWF-Hong Kong

(on behalf of Greenpeace & Friends of the Earth)

## **Appendix I – Environmental Impacts currently not covered by EIA and major social impacts currently not measured for the construction of a third runway**

### **Carbon Emissions and Cost to Flying**

Considering that carbon tax on the aviation industry have been imposed by the Australian government (AUD 23.00 per tonne), and the European Union has applied Emission Trading Scheme to Hong Kong airlines, while China and New Zealand are beginning to look into similar schemes. WWF has also pointed out that the estimated total carbon tax to be imposed on Asia-Pacific flights alone from a third runway could range up to HK\$59 billion for the next 20 years (Year 2008-2030).

In the lack of such important carbon emission information, WWF has researched aviation emissions from in-bound and out-bound flights between Hong Kong and 14 regions in Asia Pacific and projected carbon emissions from aircraft in 2030 (please refer to Notes to Editor for the methodology). Taking into account only flights travelling to and from Asia-Pacific destinations, WWF's research reveals a new runway will add at least 18.1 million tonnes of carbon emission per annum in Hong Kong in 2030. This is a 75.7 % surge compared with 2008. If Hong Kong does not build the third runway, aviation emission would be 12.8 million tonnes per annum in 2030. The 5.3 million tonnes emission difference is equivalent to the carbon emissions generated by electricity consumption of all local households for about 1 year by 2030. **This raises the question as to – how an airport expansion project may offset Hong Kong's other carbon reduction efforts and responsibility to achieve the proposed carbon reduction target of Hong Kong?**

According to WWF, in 2030, aviation emissions will cause an escalation of 40% to Hong Kong's total emissions because of the third runway. The carbon cost of the aviation emissions could be range from as low as HK\$3 billion to 59 billion for the next 20 years (Year 2008-2030). WWF did not calculate the emissions from long-haul flights due to resource limitation. The expectedly huge amount of carbon emissions cost (if all flights are included) and the question of who will pay for it are currently known.

#### Notes:

##### 1. The methodology of the aviation emissions projection

Four methodologies that are recommended by the United Nations Framework Convention on Climate Change (UNFCCC) Subsidiary Body for Scientific and Technological Advice (SSBTA) were considered in this aviation emissions projection: bunker fuel, nationality of airline, international departures/arrivals on an aircraft basis and passenger basis. WWF-Hong Kong adopts the passenger-based calculation, which is also used by the UK government. Four factors are considered in this process: 1) Projected passenger numbers and cargo flights by 2030; 2) Emissions factors for passengers and freight flights; 3) 20% fuel efficiency improvement starting from 2020, and 4) Travel distance.

##### 2. Carbon inventory

Aviation emissions are not currently included in the calculation of Hong Kong's total carbon inventory.

However, these form part of the carbon inventory of China, in-bound and out-bound flights between Hong Kong and China are counted as the emissions of the domestic flights.

### **Impacts to the Fishing Community**

With regards to fisheries, WWF points out that Government has made major commitments to start restoring the marine ecosystem and to build a sustainable fishery through a ban on all trawling in Hong Kong, and a ban on commercial fishing in Marine Parks. Analysis is needed on the impact of a third runway reclamation on such a recovery, and its economic and social costs.

A study by the University of British Columbia (UBC) Fisheries Centre on the impacts of reclamation on fisheries commissioned by WWF projects the impacts of a 650 hectares potential third runway reclamation at Hong Kong International Airport, on the recovery of the marine ecosystem and the development of sustainable fisheries in the wake of the forthcoming trawling ban and ban on commercial fishing in Marine Parks. It shows that the fishing industry would likely suffer losses in value of their catches of HK\$48 million and losses in net profit of HK\$11 million over a 18 year period.

The study also reveals that the impacts on fish catches and the fishing community of a third runway reclamation are five times greater than anticipated by Airport Authority Hong Kong (AAHK). The new UBC figure estimates the impact of a third runway to be 0.44 percent of Hong Kong's yearly production, versus AAHK's figure of 0.08 percent. The UBC study calculated the loss against the more healthy marine ecosystem and fishery resources that will occur when trawling stops in late 2012, and other fishery management measures.

The study also shows that up to 31 non-trawler fishers are likely to lose their jobs. This is because the reclamation will reduce the expected growth in marine life such as fish, shrimp and squid populations in Hong Kong following the trawling ban. Therefore, fishers' overall catches will be lower. If the government provides full compensation and training for the fishers using current procedures, the estimated costs would be between HK\$12-31 million.

### **Air Pollution**

Mr. David Theiss, an Economic expert at the New Economics Foundation (NEF) from the UK, one of the speakers at the WWF-Hong Kong's Third Runway Stakeholder Engagement Forum and Workshops on 29 August 2011, raised a number of concerns about the research performed in AAHK's third runway project proposal, and raised a worrying fact stating that "Decision-makers must properly evaluate the costs of unintended consequences, for example, based on AAHK's consultant reports and UK modelling, the projected increase in fine particulate matter pollution in affected areas, mainly in Tung Chung, could lead to an increase in mortality rates by nearly 13%. The possible sources of additional particulate matter are power plants, road side traffic, and new infrastructure - not limited to the proposed new runway. Such profound social costs must be considered by the Hong Kong Government when evaluating the potential cumulative impacts from different pollution sources."

Friends of the Earth (FoE) considers the airport expansion plan will damage the health of residents due to deteriorated air quality. AAHK has refused to explain to the public how the airport expansion plan will further impact air quality in Hong Kong. FoE conducted the first public opinion survey in relation to the airport expansion plan and found that over 70% of the interviewees have never heard of AAHK mentioning the impacts on air quality from the consultation for airport expansion. Over 62.6% respondents did not know that the concentration level of NO<sub>2</sub> will exceed the safety level once the proposed new Air Quality Objectives (AQOs) are implemented. NO<sub>2</sub> is a major pollutant from flight emissions. Following the standard of the proposed AQOs, the average concentration level of NO<sub>2</sub> exceeded the safety level in 2010 the entire Hong Kong, with the exception of Tap Mun. The level was 10% higher than safety level at Tung Chung nearby the airport, threatening the health of residents. The survey revealed that the public generally had no knowledge about the potential risks to health from deteriorated air quality to be brought by the airport expansion.

If the third runway project goes ahead, the emissions will be greatly doubled by the increased flights flying in and out Hong Kong. The increased transportation flows on land and traffic from the Hong Kong Macau Zhuhai Bridge will further compound the pollution level accumulated in North Lantau. The health of residents in Tung Chung and Tuen Mun will be at risk while road side pollution will also worsen.

AAHK must calculate and take into account all these costs to public health and disclose such information for public debate before a decision to expand the airport is made. The recently updated AQOs are far from sufficient to protect public health in the process of EIA. The Hong Kong government and AAHK must calculate these environmental impacts and social costs before the project enters the EIA process.

The vehicular flow, both logistics and tourist sides, will increase due to the expansion of the airport. However, AAHK has never provided those data to the public and no one knows about the impact from the NO<sub>x</sub> and RSP increase besides the increases of flights. AAHK should analysis the “contribution” of pollutants on the roadside and what is the impact to the Tung Chung residents.

Please see more details at FoE’s press release:

[http://www.foe.org.hk/welcome/gettc.asp?language=tc&id\\_path=1,%207,%2028,%20150,%204568,%204763](http://www.foe.org.hk/welcome/gettc.asp?language=tc&id_path=1,%207,%2028,%20150,%204568,%204763)

**Public Opinion Programme of HKU**  
**WWF**  
**Greenpeace**  
**Opinion survey on the Potential Third Runway**  
**18 Jan 2012**

(Please base on Chinese for accuracy, English is for reference only)

**Fieldwork Details**

Fieldwork Dates: 13-16/1/2012  
 Successful sample Size: 1,001  
 Research Method: Random sample using telephone survey  
 Target: Cantonese-speaking Hong Kong residents aged 18 or above  
 Valid Response rate: 66.8%  
 Sampling error: less than 1.6% (At 95% confidence level, the sampling error of percentage obtained in this survey is less than +/-3.2%)

Frequency table of all variables

**Q1 Do you think the government strikes a good balance between economic development and environmental protection?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes, the government strikes a good balance between the two issues.	264	26.4	26.6	26.6
	<b>2 no - too much emphasis on economic development</b>	557	55.6	<b>56.0</b>	82.6
	3 no - too much emphasis on environmental protection	63	6.3	6.3	88.9
	8888 No idea / Hard to say	110	11.0	11.1	100.0
	Total	994	99.3	100.0	
Missing	refuse to answer	7	.7		
Total		1001	100.0		

**Q2 As far as you know, which of the following environmental issues have been addressed by the Airport Authority in their Third runway consultation? (Carbon Emissions contributed by air traffic growth)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 yes	173	17.2	17.2	17.2
	2 no	380	37.9	37.9	55.2
	<b>8888 I don't know</b>	449	44.8	<b>44.8</b>	100.0
	Total	1001	100.0	100.0	

**Q3 As far as you know, which of the following environmental issues have been addressed by the Airport Authority in their Third runway consultation? (Marine Habitat)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<b>1 Yes</b>	383	38.2	<b>38.3</b>	38.3
	2 No	307	30.6	30.6	68.9
	8888 I don't know	311	31.1	31.1	100.0
	Total	1000	99.9	100.0	
Missing	9999 refuse to answer	1	.1		
Total		1001	100.0		

**Q4 How much would the following potential environmental impacts of the Third Runway concern you? (Chinese White Dolphin)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very concerned	249	24.9	25.0	25.0
	<b>2 Quite concerned</b>	398	39.8	<b>40.0</b>	65.0



	3 Half-half	146	14.6	14.6	79.6
	4 Not so concerned	134	13.4	13.5	93.1
	5 Definitely not concerned	25	2.5	2.5	95.6
	8888 I don't know	44	4.4	4.4	100.0
	Total	997	99.6	100.0	
Missing	99 Refuse to answer	4	.4		
Total		1001	100.0		

**Q5 How much would the following potential environmental impacts of the Third Runway concern you? (Land Reclamation)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very concerned	284	28.4	28.5	28.5
	<b>2 Quite concerned</b>	389	38.9	<b>39.0</b>	67.5
	3 Half-half	129	12.9	13.0	80.4
	4 Not so concerned	124	12.4	12.4	92.9
	5 Definitely not concerned	25	2.5	2.5	95.3
	8888 I don't know	47	4.6	4.7	100.0
	Total	998	99.7	100.0	
Missing	99 Refuse to answer	3	.3		
Total		1001	100.0		

**Q6 How much would the following potential environmental impacts of the Third Runway concern you? - (Fish catch)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very concerned	233	23.3	23.5	23.5
	<b>2 Quite concerned</b>	342	34.1	<b>34.3</b>	57.8
	3 Half-half	136	13.6	13.7	71.5
	4 Not so concerned	191	19.1	19.2	90.7
	5 Definitely not concerned	39	3.9	3.9	94.6
	8888 I don't know	53	5.3	5.4	100.0
	Total	995	99.4	100.0	
Missing	99 Refuse to answer	6	.6		
Total		1001	100.0		

**Q7 How much would the following potential environmental impacts of the Third Runway concern you?- (Carbon Emissions brought by air traffic growth)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very concerned	255	25.5	25.6	25.6
	<b>2 Quite concerned</b>	372	37.1	<b>37.3</b>	62.9
	3 Half-half	120	12.0	12.1	75.0
	4 Not so concerned	154	15.4	15.4	90.4
	5 Definitely not concerned	27	2.7	2.7	93.1
	8888 I don't know	69	6.9	6.9	100.0
	Total	996	99.5	100.0	
Missing	99 Refuse to answer	5	.5		
Total		1001	100.0		

**Q8 As far as you know, which of the following issues would be addressed by the EIA process ?**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
	1000	99.9%	1		1001	100.0%

  

	Responses		
	N	Percent	Percent of Cases
<b>1 Air Quality</b>	649	23.4%	<b>64.9%</b>
5 Water Quality	538	19.4%	53.8%
2 Noise Issue	535	19.3%	53.5%

	3 Carbon emissions	473	17.0%	47.2%
	4 Ecological issues	459	16.5%	45.9%
	8886 none of the above	30	1.1%	3.0%
	8888 I don't know	94	3.4%	9.4%
Total		2778	100.0%	

**Q9 Do you think the government should consider a carbon tax when calculating the cost of the Third runway?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Agree Very Much	388	38.7	38.7	38.7
	<b>2 Quite Agree</b>	389	38.9	<b>38.9</b>	77.6
	3 Half-half	35	3.5	3.5	81.1
	4 Do not quite agree	39	3.9	3.9	85.0
	5 Definitely Not agree	15	1.5	1.5	86.5
	8888 Don't know/Hard to say/don't understand	135	13.5	13.5	100.0
	Total	1001	100.0	100.0	

**Q10 What importance do you think the government should place on the following elements when contemplating the construction of a Third Runway?(Economic Benefits brought by the third runway)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<b>1 Very important</b>	491	49.1	<b>49.1</b>	49.1
	2 Quite important	387	38.7	38.7	87.9
	3 Half-half	46	4.6	4.6	92.4
	4 Not so important	27	2.7	2.7	95.1
	5 Definitely not important	3	.3	.3	95.4
	8888 Don't know/Hard to say/don't understand	46	4.6	4.6	100.0
	Total	1000	99.9	100.0	
Missing	Refuse to answer	1	.1		
Total		1001	100.0		

**Q11 What importance do you think the government should place on the following elements when contemplating the construction of a Third Runway?- (Environment and social cost)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<b>1 Very important</b>	379	37.8	<b>38.1</b>	38.1
	2 Quite important	349	34.8	35.1	73.2
	3 Half-half	91	9.1	9.1	82.3
	4 Not so important	114	11.4	11.5	93.8
	5 Definitely not important	22	2.2	2.3	96.0
	8888 Don't know/Hard to say/don't understand	39	3.9	4.0	100.0
	Total	994	99.3	100.0	
Missing	Refuse to answer	7	.7		
Total		1001	100.0		

**Q12 What importance do you think the government should place on the following elements when contemplating the construction of a Third Runway? - (Health of the people around the airport)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<b>1 Very important</b>	359	35.8	<b>36.0</b>	36.0
	2 Quite important	325	32.4	32.6	68.6
	3 Half-half	97	9.7	9.7	78.4
	4 Not not important	143	14.3	14.3	92.7
	5 Definitely not important	31	3.1	3.1	95.9
	8888 Don't know/Hard to say/don't understand	41	4.1	4.1	100.0
	Total	996	99.5	100.0	

Missing	Refuse to answer	5	.5
Total		1001	100.0

**Q13 What do you think the government should do to reduce the carbon emissions caused by air traffic growth in the Pearl River Delta Region?**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
	1000	99.9%	1		1001	100.0%

  

	Responses		
	N	Percent	Percent of Cases
<b>1 Cooperate with other PRD regions to reduce carbon emissions</b>	679	34.9%	<b>67.9%</b>
4 urge airlines to improve fuel efficiency	433	22.3%	43.3%
2 propose and adopt a carbon tax	374	19.2%	37.4%
3 urge airlines to adopt carbon offset policies	345	17.7%	34.5%
8886 None of the above	24	1.2%	2.4%
8888 don't know/hard to say/don't understand	89	4.6%	8.9%
Total	1943	100.0%	

**Demographic analysis**

**sex [S6]**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	458	45.7	45.7	45.7
	2 Female	543	54.3	54.3	100.0
	Total	1001	100.0	100.0	

**age**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 18 - 19	29	2.8	2.9	2.9
	2 20 - 29	163	16.3	16.4	19.3
	3 30 - 39	186	18.6	18.7	38.0
	4 40 - 49	204	20.4	20.5	58.5
	5 50 - 59	191	19.1	19.2	77.7
	6 60 or above	221	22.1	22.3	100.0
	Total	995	99.4	100.0	
Missing	99 Refuse to answer	6	.6		
Total		1001	100.0		

**education**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Primary or below	134	13.4	13.4	13.4
	2 Form 1 to 3 (Junior Secondary)	140	14.0	14.0	27.5
	3 Form 4 to Form 5 (Senior Secondary)	273	27.3	27.4	54.9
	4 Form 6 to Form 7 (Matriculation)	64	6.4	6.4	61.3
	5 College (Non-degree)	66	6.6	6.6	67.9
	6 College (Degree)	277	27.7	27.8	95.7
	7 (Postgraduate)	42	4.2	4.3	100.0
	Total	996	99.5	100.0	
Missing	99 Refuse to answer	5	.5		
Total		1001	100.0		

**education group**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Primary or below	134	13.4	13.4	13.4
	2 Secondary	477	47.6	47.9	61.3
	3 College or above	385	38.5	38.7	100.0
	Total	996	99.5	100.0	
Missing	99 Refuse to answer	5	.5		
Total		1001	100.0		

**occupation**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Executives or manager	83	8.3	8.4	8.4
	2 Professional	91	9.1	9.2	17.6
	3 Associate Professional	68	6.8	6.9	24.5
	4 Clerk	122	12.2	12.3	36.8
	5 Service worker	52	5.2	5.3	42.0
	6 Shop sales worker	15	1.5	1.5	43.6
	7 Skilled agricultural and fishery worker	2	.2	.2	43.7
	8 Craft and related worker	20	2.0	2.0	45.8
	9 Plant and machine operator and assembler	10	1.0	1.0	46.8
	10 Driver	13	1.3	1.3	48.1
	11 non-technical worker	37	3.7	3.7	51.8
	12 Student	99	9.9	10.0	61.8
	13 Housewife	159	15.9	16.1	77.9
	14 Domestic Worker	1	.1	.1	78.0
	15 occupation not classifiable	7	.7	.7	78.6
	16 Retired	175	17.4	17.6	96.3
	17 unemployed	31	3.1	3.2	99.5
8887 others occupations	5	.5	.5	100.0	
Total		989	98.8	100.0	
Missing	99 Refuse to answer	12	1.2		
Total		1001	100.0		

**occupation group**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Executives or professional	242	24.2	24.5	24.5
	2 White-collar worker	189	18.9	19.1	43.6
	3 Blue-collar worker	81	8.1	8.2	51.8
	4 Student	99	9.9	10.0	61.8
	5 Housewife	159	15.9	16.1	77.9
	6 Other	219	21.8	22.1	100.0
Total		989	98.8	100.0	
Missing	99 Refuse to answer	12	1.2		
Total		1001	100.0		