National Survey of Employers 2012/13: Summary Findings

Appendix 1: Methodology

Survey method

Respondents to the NSE 2012/13 were given the option to be interviewed by telephone, or to complete the questionnaire online. Pre-notification letters about the survey were sent by Research New Zealand on behalf of the Ministry (and using the Ministry's letterhead) to all sampled businesses. The letters were addressed to the business owner or manager, and explained the purpose of the research and Research New Zealand's involvement as an independent market research company. The letter also advised respondents that participation was voluntary and on a confidential basis, and that results would be reported as aggregated statistics, with verbatim comments anonymised.

In the letter, potential respondents were advised that an interviewer from Research New Zealand would call them to ask if they would like to participate in the survey and to make an appointment for the interview at a time convenient for the respondent. Respondents were also invited to complete the survey online instead if they wished. To facilitate this, the letter contained the survey's URL (hosted on Research New Zealand's secure website), and each potential respondent was issued with a unique login and password to ensure that a business could only complete the survey once.

Surveying was undertaking between the dates of 30 October 2012 and 8 March 2013, with interviewing suspended between 17 December and 21 January, due to increasing refusal rates over the Christmas and New Year's holiday period. Contact was attempted a minimum of eight times with each sampled business that had not completed the online version of the survey by a predetermined date, prior to the business being deemed as unavailable to participate in the survey. Contact attempts were made on different days of the week and during different hours of the day to try and maximise survey response rates. In total 1,529 businesses completed the survey by the close off date (1,121 by telephone and 408 online). The average telephone interview length was just under 20 minutes.

Sample design, weighting and response rate

The survey sample was drawn from Statistics New Zealand's Business Frame of New Zealand businesses. The target population for the NSE was New Zealand businesses (at the geographic establishment level) employing one or more staff (in addition to the owner).

The sampling scheme involved the selection of a probability sample, based upon the available numbers of businesses in each of six target industry groups, broken down by the number of employees (at the establishment level) across four size band groupings. In total 4,742 'unique' records were selected from Statistics New Zealand's Business Frame (using a random stratified sampling approach) and provided to Research New Zealand for the purposes of the survey.

The achieved sample of 1,529 businesses was weighted to adjust for the sampling scheme and any non-response biases among businesses of certain size within any of the 24 different sampling strata. This involved calculating a sampling weight, that reflected the probability of selection in each stratum based on the six different industry and four employee band groupings, where the

weight was equal to the number of establishments in each stratum on the Business Frame divided by the number of respondents in each stratum.

Tables 1 and 2 below provide the unweighted and final weighted frequency counts of the achieved sample by industry grouping and the reported number of employees regularly working at the business site.

Table 1: Achieved sample – Unweighted counts: Industry group by reported number of employees at the business site

ANZSIC Description by Reported Number of Employees	1 to 5	6 to 19	20 to 49	50 +	Grand Total
A – Agriculture, Forestry and Fishing	71	63	52	44	230
C – Manufacturing	37	71	51	94	253
E – Construction	59	64	44	66	233
G + H – Retail Trade and Accommodation and Food Services	43	59	53	69	224
Q – Health Care & Social Assistance	31	50	63	89	233
D, B, G,I, J, K, L, M, N, O, P, R, S – All Other Industries	78	87	86	105	356
Grand Total	319	394	349	467	1529

Table 2: Achieved sample – Weighted counts: Industry group by reported number of employees at the business site

ANZSIC Description by Reported Number of Employees	1 to 5	6 to 19	20 to 49	50 +	Grand Total
A – Agriculture, Forestry and Fishing	17,377	3,820	615	170	21,982
C – Manufacturing	6,369	4,154	1,296	791	12,610
E – Construction	13,416	3,575	775	297	18,063
G + H – Retail Trade and Accommodation and Food Services	18,578	11,818	2,144	924	33,464
Q – Health Care & Social Assistance	5,750	3,122	991	722	10,585
D, B, G,I, J, K, L, M, N, O, P, R, S – All Other Industries	49,879	20,937	5,829	3,031	79,676
Grand Total	111,369	47,426	11,650	5,935	176,380

The survey achieved a 44 per cent response rate. Factors impacting on the response rate included: increased refusal rates as surveying got closer to Christmas; 'gatekeeper' refusals when asking to speak to the business owner/manager (pre-calls were made to identify the business owner or manager so that pre-notification letters could be sent to a named respondent); some respondents being unwilling to participate in a survey requiring more than 10 to 15 minutes to complete.

Sampling errors

Table 3 provides details of the survey respondents' unweighted demographic characteristics (industry group and reported number of employees – as size groups) and the associated maximum sampling error estimate, at the 95 per cent confidence level, for each sub-group.

Tables 4, 5 and 6 provide estimated margins of error (MoEs) for various proportions of 10 to 50 per cent for subsamples of the population based on industry group and size groups.

The estimated maximum margins of error associated with the total sample and each sub-sample take into account a design effect coefficient deft which has been calculated based upon the distribution of the final weights of each sub-sample. These indicative MoEs are provided as a 'guideline' to show the degree of accuracy likely to be associated with different survey findings, for both the total sample and key sub-samples of interest. More accurate finding-specific confidence interval (CIs) estimates for the total sample and businesses having 1 to 19 employees and 20 plus employees can be found in the tables in Appendix 2.

Table 3: Maximum margins of error (95 per cent confidence level)

	Sample size	Per cent of total sample %	Max Margin of Error^ for a 50% result (SRS) %	Design effect coefficient (*deft*)*	**Adjusted Max Margin of Error %
KMS industry type					
A – Agriculture, Forestry and Fishing	230	15.0	6.5	*1.468*	9.5
C – Manufacturing	253	16.5	6.2	*1.477*	9.2
E – Construction	233	15.2	6.4	*1.538*	9.8
G + H – Retail Trade and Accommodation and Food Services	224	14.7	6.5	*1.450*	9.4
Q – Health Care & Social Assistance	233	15.2	6.4	*1.629*	10.4
D, B, G,I, J, K, L, M, N, O, P, R, S – All Other Industries	356	23.3	5.2	*1.446*	7.5
Number of reported employees at site					
1 to 5	319	20.9	5.5	*1.125*	6.2
6 to 19	394	25.8	4.9	*1.203*	5.9
20 to 49	349	22.8	5.2	*1.233*	6.4
50 +	467	30.5	4.5	*1.232*	5.5
Total	1,529	100	2.5	*1.690*	4.2

Note: Percentages may not total 100 per cent due to rounding.

^ Maximum margins of error (MoE) assuming a Simple Random Sample (SRS). The MoE is calculated using the following formula, where n is the achieved sample size for the sub-group, p is 50 per cent, and a 95 per cent confidence level: $z(1.96) \times \sqrt{\dfrac{p(1-p)}{n}}$

* The SRS margin of error is multiplied by the design effect coefficient (*deft*) to get the approximate margin of error.

**Estimated maximum margin of error (MoE) after application of *deft.*

Table 4: Estimated margins of error for proportional responses – Industry grouping*

Proportional response Base =	Total sample 1,529	Ag/Forestry Fishing & 230	Manufacturing 253	Construction 233	Retail/ Accommodation/ Food Service 224^	Health/Social Services 233	All Other Industries 356
	%	%	%	%	%	%	%
50 %	4.2	9.5	9.1	9.9	9.5	10.5	7.5
40 %	4.1	9.3	8.9	9.7	9.3	10.2	7.4
30 %	3.9	8.7	8.3	9.0	8.7	9.6	6.9
20 %	3.4	7.6	7.3	7.9	7.6	8.4	6.0
10 %	2.5	5.7	5.5	5.9	5.7	6.3	4.5

* Estimated margins of error have been calculated based on the relevant survey design effect and sample size.
^ Estimated MoEs for Retail/Accommodation/Food Service are lower than those for Construction and Health and Social Services, despite having a small size sample, due to variances in weightings applied to each sub-sample. Similarly, Health and Social Services has higher estimated MoEs than Construction due to variances in weightings within each sub-sample.

Table 5: Estimated margins of error for proportional responses – establishment size groups*

Proportional response Base =	Total sample 1,529	1 to 5 319	6 to 19 394	20 to 49 349	50 + 467
	%	%	%	%	%
50 %	4.2	6.2	5.9	6.5	5.6
40 %	4.1	6.0	5.8	6.3	5.5
30 %	3.9	5.7	5.4	5.9	5.1
20 %	3.4	4.9	4.8	5.2	4.5
10 %	2.5	3.7	3.6	3.9	3.4

* Estimated margins of error have been calculated based on the relevant survey design effect and sample size.
^ The MoEs for businesses with 20 to 49 employees are larger than those for businesses with 1 to 5, despite having a larger size sample, due to variance in weightings applied to each sub-sample.

Table 6: Estimated margins of error for proportional responses – collapsed establishment size groups*

Proportional response Base =	Total sample 1,529	1 to 19 713^	20 + 816^
	%	%	%
50 %	4.2	4.7	4.5
40 %	4.1	4.6	4.5
30 %	3.9	4.3	4.2
20 %	3.4	3.7	3.6
10 %	2.5	2.8	2.7

* Estimated margins of error have been calculated based on the relevant survey design effect and sample size.
^ defts (1 to 19 staff, deft=1.277) (20 plus staff, deft=1.326).