

Appendix C. Results of statistical analyses in Chapter 4.

The multivariate analyses in Chapter 4 are undertaken to examine the relationship between an outcome variable Y and a number of explanatory variables X_1, X_2, \dots, X_n .

Y is usually a dichotomous variable: such as whether a migrant can speak good English or not; whether a migrant is employed or not employed, whether a migrant has income above the average weekly earnings or not, and so on.

The explanatory variables in the analyses include a set of four on arrival characteristics: sex (male, female); age on arrival (15-24, 25-34, 35-44, 45-64); migration category (Preferential Family, Concessional Family, Business/Employer Nomination Scheme, Independent, Humanitarian); and qualifications on arrival (degree or higher, vocational, none). These variables are included partly to examine whether they have a significant relation to the dependent variable and partly to control for their effects in examining the relationship between the dependent variable and other outcome variables. For example, it is important to control for on-arrival characteristics when examining whether physical wellbeing at wave 3 (3.5 years after arrival) is affected by employment outcome at wave 2 (18 months after arrival).

The statistical analyses in Chapter 4 have been undertaken using the logistic regression procedure in the SAS computer package. The logistic curve has the following form:

$$P = \exp(b_0 + b_1X_1) / (1 + \exp(b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n))$$

Where P is the proportion of the dependent variable at each value of the explanatory variables X_1, X_2, \dots, X_n , and b_0, b_1, \dots, b_n are numerical constants to be estimated and \exp is the exponential function.

The logistic function can be transformed into a linear model of the form:

$$\ln(p/(1-p)) = b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n$$

$$\text{or } p/(1-p) = \exp(b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n)$$

where $p/(1-p)$ is the odds of being employed relative to being not employed, for example, if the dependent variable Y is employment outcome. The b coefficients indicate how the odds are related to the set of explanatory variables X_1, X_2, \dots, X_n .

The logistic regression analyses were carried out using weighted data that were then normalised to the original sample size. Each outcome variable was examined at three time points coinciding with the three waves of the survey. The results are presented in the following seven tables.

The tables show the estimated b coefficients as $\exp(b)$ or the odds ratio. The odds ratio is interpreted in the following way in Table C1 where the dependent variable is English proficiency (defined as speaking good English vs not speaking good English) among migrants who cannot speak good English at the time of arrival or the preceding interview. The odds ratio of 8.727 associated with Age: 15-24 vs 45-64 indicates that

the odds that a migrant aged 15-24 who cannot speak English at the time of arrival will be able to speak good English at 18 months after arrival is more than 8 times that of the odds that a migrant aged 45-64 who cannot speak good English at arrival will be able to speak good English 18 months after arrival. The probability that this difference in the odds is due to chance is less than 0.05. This indicates that there is a real difference between a migrant aged 15-24 and another aged 45-64 in their ability to improve their English when both cannot speak English on arrival and are matched on their sex, visa category, level of qualifications and the other correlates listed in the table.

Therefore odds ratios that are close to 1 indicate that there is very little difference between the people in the two categories of a variable being compared. An odds ratio greater than 1 indicates that a person in that category is more likely to have a particular outcome than a person in the reference category. An odds ratio less than 1 indicates that a person in that category is less likely to have a particular outcome than a person in the reference category. Odds ratios that are significantly greater or less than 1 at $p < 0.05$ are indicated by an * in the tables.

Appendix Table C4.1. Correlates of improvement in English proficiency: principal applicants aged 15-64 who did not speak English well at the previous interview.

| Correlates | Categories | Odds ratio of speaking good English | |
|--------------------------------------------|--------------------|-------------------------------------|----------------------------|
| | | 18 months after arrival | 3.5 years after arrival |
| Sex: | F vs M | 0.877 | 0.545* |
| Age: | 15-24 vs 45-64 | 8.727* | 10.684* |
| | 25-34 vs 45-64 | 5.400* | 8.922* |
| | 35-44 vs 45-64 | 3.734* | 4.744* |
| Visa category | PF vs Humanitarian | 0.548* | 0.772 |
| | CF vs Humanitarian | 0.572 | 0.738 |
| | BS vs Humanitarian | 0.307 | 0.839 |
| | IN vs Humanitarian | 0.652 | 1.214 |
| Qualifications on arrival | Degree vs None | 4.104* | 3.717* |
| | Voc/trade vs None | 2.406* | 2.827* |
| Health rating at 6 months | Very good vs fair | 2.424* | |
| | Good vs fair | 1.633* | |
| Health rating at 18 months | Very good vs fair | | 1.265 |
| | Good vs fair | | 1.611* |
| Mental health at: 6 months 18 months | | 0.981 | |
| | | | 1.015 |
| Employment status 6 months | Employed vs NLF | 1.127 | |
| | Unemployed vs NLF | 0.725* | |
| Employment status 18 months | Employed vs NLF | | 1.252 |
| | Unemployed vs NLF | | 0.864 |
| Income at 6 months Income at 18 months | High vs low | 0.552 | |
| | High vs low | | 0.775 |
| Number of respondents | | 1609 | 1001 |

Source: LSIA1

* $p < 0.05$

Appendix Table C4.2. Correlates of citizenship at 3.5 years after arrival: all principal applicants aged 15-64 who participated in all three interviews

| Correlates | Categories | Odds ratio of becoming/applying to be a citizen |
|----------------------------------|---------------------------------|-------------------------------------------------|
| Sex | F vs M | 0.988 |
| Age | 15-24 vs 45-64 | 0.871 |
| | 25-34 vs 45-64 | 0.894 |
| | 35-44 vs 45-64 | 1.120 |
| Visa category | PF vs Humanitarian | 0.201* |
| | CF vs Humanitarian | 0.498* |
| | BS vs Humanitarian | 0.247* |
| | IN vs Humanitarian | 0.432* |
| Qualifications on arrival | Degree vs None | 1.026 |
| | Voc/trade vs None | 0.862 |
| English proficiency at 18 months | Very well vs Not well/at all | 0.439* |
| | Well vs Not well/at all | 0.944 |
| Health rating at 18 months | Very good vs fair | 0.629* |
| | Good vs fair | 0.799 |
| Mental health at 18 months | | 0.998 |
| Employment status at 18 months | Employed vs NLF | 0.732* |
| | Unemployed vs NLF | 1.003 |
| Income at 18 months | High vs low | 0.819 |
| Owned home at 18 months | | 0.976 |
| Satisfied with life at 18 months | Very satisfied vs not satisfied | 1.567* |
| | Satisfied vs not satisfied | 1.173 |
| Number of respondents: | | 3434 |

Source: LSIA1

* p<0.05

Appendix Table C4.3. Correlates of being employed: principal applicants aged 15-64 in the labour force

| Correlates | Categories | Odds ratio of being employed within: | | |
|----------------------------------|-------------------------|--------------------------------------|-----------|----------------------|
| | | 6 months | 18 months | 3.5 years of arrival |
| Sex | F vs M | 0.870 | 1.110 | 0.971 |
| Age | 15-24 vs 45-64 | 3.784* | 1.647* | 2.672* |
| | 25-34 vs 45-64 | 3.565* | 2.685* | 3.552* |
| | 35-44 vs 45-64 | 2.720* | 1.508* | 2.954* |
| Visa category | PF vs Humanitarian | 5.623* | 2.613* | 1.657* |
| | CF vs Humanitarian | 6.685* | 3.028* | 2.865* |
| | BS vs Humanitarian | 204.671* | 24.580* | 16.773* |
| | IN vs Humanitarian | 8.133* | 3.940* | 4.476* |
| Qualifications on arrival | Degree vs None | 0.822 | 0.635* | 1.005 |
| | Vocat./trade vs None | 1.411* | 1.099 | 1.265 |
| English proficiency at 6 months | Very well vs Not at all | 7.134* | 7.460* | |
| | Well vs Not at all | 3.595* | 3.454* | |
| | Not well vs Not at all | 2.586* | 2.062* | |
| English proficiency at 18 months | Very well vs Not at all | | | 5.441* |
| | Well vs Not at all | | | 2.364* |
| Health rating at 6 months | Very good vs fair | 0.965 | 1.614* | |
| | Good vs fair | 1.212 | 1.354 | |
| Health rating at 18 months | Very good vs fair | | | 1.886* |
| | Good vs fair | | | 1.426 |
| Mental health at 6 months | | 0.932* | 1.017 | |
| | | | | 0.982 |
| Number of respondents | | 3051 | 2873 | 2515 |

Source: LSIA1

* p<0.05

Appendix Table C4.4. Correlates of having income at least \$35,000 per year: all principal applicants aged 15-64 years

| Correlates | Categories | Odds ratio of having income \$35,000+ | | |
|-------------------------------------------|----------------------------|---------------------------------------|----------------------------|----------------------------|
| | | 6 months after arrival | 18 months after arrival | 3.5 years after arrival |
| Sex | F vs M | 0.340* | 0.331* | 0.308* |
| Age | 15-24 vs 45-64 | 0.550 | 0.806 | 2.355* |
| | 25-34 vs 45-64 | 0.909 | 1.753* | 2.229* |
| | 35-44 vs 45-64 | 1.116 | 1.994* | 1.290 |
| Visa category | PF vs Humanitarian | 0.792 | 2.337* | 1.140 |
| | CF vs Humanitarian | 1.374 | 2.530* | 1.591 |
| | BS vs Humanitarian | 7.743* | 13.221* | 5.823* |
| | IN vs Humanitarian | 2.360 | 6.528* | 3.571* |
| Qualifications on arrival | Degree vs None | 4.003* | 2.226* | 3.059* |
| | Voc/trade vs None | 1.323 | 0.958 | 1.247 |
| English proficiency at 6 months | V. well vs None | 3.568 | 3.769* | |
| | Well vs None | 1.420 | 1.060 | |
| | Not well vs None | 0.465 | 0.879 | |
| English proficiency at 18 months | V. well vs Not well/at all | | | 5.274* |
| | Well vs Not well/at all | | | 1.716* |
| Health rating at 6 months | Very good vs fair | 1.046 | 1.186 | |
| | Good vs fair | 1.258 | 1.324 | |
| Health rating at 18 months | Very good vs fair | | | 1.138 |
| | Good vs fair | | | 1.091 |
| Mental health at 6 months 18 months | | 0.990 | 1.007 | |
| | | | | 0.983 |
| Employment status at 6 months | Employed vs NLF | 12.585* | | |
| | Unemployed vs NLF | 0.043* | | |
| Employment status at 18 months | Employed vs NLF | | 14.836* | |
| | Unemployed vs NLF | | 0.260* | |
| Employment status at 3.5 years | Employed vs NLF | | | 14.257* |
| | Unemployed vs NLF | | | 1.490 |
| Number of respondents | | 4875 | 4216 | 3432 |

Source: LSIA1

* p<0.05

Appendix Table C4.5. Correlates of home ownership: all principal applicants aged 15-64.

| Correlates | Categories | Odds ratio of home ownership | | |
|-------------------------------------|--------------------------------|------------------------------|----------------------------|----------------------------|
| | | 6 months after arrival | 18 months after arrival | 3.5 years after arrival |
| Sex | F vs M | 1.514* | 1.709* | 1.471* |
| Age | 15-24 vs 45-64 | 0.402* | 0.383* | 0.798 |
| | 25-34 vs 45-64 | 0.528* | 0.446* | 0.794 |
| | 35-44 vs 45-64 | 1.301 | 1.157 | 1.809* |
| Visa category | PF vs Humanitarian | 25.994* | 5.607* | 3.999* |
| | CF vs Humanitarian | 11.547* | 3.872* | 3.064* |
| | BS vs Humanitarian | 49.893* | 7.407* | 4.897* |
| | IN vs Humanitarian | 7.701* | 3.418* | 2.418* |
| Qualifications on arrival | Degree vs None | 1.001 | 0.774* | 0.952 |
| | Voc/trade vs None | 1.239 | 1.150 | 1.429* |
| English proficiency at 6 months | V. well vs None | 2.516* | 2.778* | |
| | Well vs None | 2.496* | 2.916* | |
| | Not well vs None | 1.941* | 1.625* | |
| English proficiency at 18 months | V. well vs B24 Not well/at all | | | 1.594* |
| | Well vs Not well/at all | | | 1.087 |
| Health rating at 6 months | Very good vs fair | 1.269 | 1.469* | |
| | Good vs fair | 1.169 | 1.303 | |
| Health rating at 18 months | Very good vs fair | | | 0.854 |
| | Good vs fair | | | 0.859 |
| Mental health at 6 months | | 0.982 | 1.002 | |
| Mental health at 18 months | | | | 0.992 |
| Employment status at 6 months | Employed vs NLF | | 1.261* | |
| | Unemployed vs NLF | | 0.575* | |
| Employment status at 18 months | Employed vs NLF | | | 1.704* |
| | Unemployed vs NLF | | | 0.920 |
| Income at 6 months | High vs low | | 1.759* | |
| Income at 18 months | High vs low | | | 1.608* |
| Number of respondents: | | 4967 | 4202 | 3434 |

Source: LSIA1

* p<0.05

Appendix Table C4.6. Correlates of mental health status: all principal applicants aged 15-64.

| Correlates | Categories | Regression coefficients on mental health score | | |
|-------------------------------------|---------------------|------------------------------------------------|----------------------------|----------------------------|
| | | 6 months after arrival | 18 months after arrival | 3.5 years after arrival |
| Sex | F vs M | 0.715* | 0.833* | 0.609* |
| Age | 15-24 vs 45-64 | -0.559 | -0.937* | -1.065* |
| | 25-34 vs 45-64 | 0.011 | -0.576* | -0.747* |
| | 35-44 vs 45-64 | 0.032 | -0.195 | -0.552* |
| Visa category | PF vs Humanitarian | -0.612* | -0.740* | -0.426 |
| | CF vs Humanitarian | -0.866* | 0.643* | -0.927* |
| | BS vs Humanitarian | -1.347* | -0.734* | -0.724* |
| | IN vs Humanitarian | -0.575 | -0.725* | -0.611 |
| Qualifications on arrival | Degree vs None | 1.673* | 0.921* | 0.999* |
| | Voc/trade vs None | 0.899* | 0.704* | 0.843* |
| English proficiency at 6 months | V. well vs None | -0.621* | -0.253 | |
| | Well vs None | -0.742* | -0.409 | |
| | Not well vs None | -0.704* | -0.488 | |
| English proficiency at 18 months | V. well vs Not well | | | -0.905* |
| | Well vs Not well | | | -0.670* |
| Owned home at 6 months | | -0.348 | -0.441 | |
| Owned home at 18 months | | | | -0.277 |
| Employment status at 6 months | Employed vs NLF | -0.449* | -0.390 | |
| | Unemployed vs NLF | 0.981* | 0.124 | |
| Employment status at 18 months: | Employed vs NLF | | | -0.681* |
| | Unemployed vs NLF | | | 0.050 |
| Income at 6 months | | 0.079 | 0.612* | |
| Income at 18 months | | | | 0.412 |
| Number of respondents | | 5026 | 4324 | 3499 |

Source: LSIA1

* p<0.05

Appendix Table C4.7. Correlates of health status: all principal applicants aged 15-64.

| Correlates | Categories | Odds ratio of reporting good health | | |
|-------------------------------------|----------------------------|-------------------------------------|----------------------------|----------------------------|
| | | 6 months after arrival | 18 months after arrival | 3.5 years after arrival |
| Sex | F vs M | 0.407* | 0.510* | 0.597* |
| | 15-24 vs 45-64 | 3.160* | 1.669* | 2.563* |
| | 25-34 vs 45-64 | 2.234* | 1.483* | 1.808* |
| | 35-44 vs 45-64 | 2.426* | 1.896* | 1.758* |
| Visa category | PF vs Humanitarian | 1.487* | 1.669* | 1.555* |
| | CF vs Humanitarian | 2.447* | 1.453 | 2.159* |
| | BS vs Humanitarian | 1.872 | 1.298 | 3.140* |
| | IN vs Humanitarian | 1.580* | 1.319 | 1.738* |
| Qualifications on arrival | Degree vs None | 1.243 | 1.164 | 0.838 |
| | Voc/trade vs None | 1.003 | 1.108 | 0.739* |
| English proficiency at 6 months | V. well vs None | 2.422* | 1.876* | |
| | Well vs None | 2.674* | 2.038* | |
| | Not well vs None | 1.267 | 1.474* | |
| English proficiency at 18 months | V. well vs Not well/at all | | | 1.666* |
| | Well vs Not well/at all | | | 1.576* |
| Employment status at 6 months | Employed vs NLF | 0.946 | 1.303 | |
| | Unemployed vs NLF | 0.666* | 0.781* | |
| Employment status at 18 months | Employed vs NLF | | | 1.543* |
| | Unemployed vs NLF | | | 0.890 |
| Income at 6 months | | | 0.957 | |
| Income at 18 months | | | | 0.912 |
| Number of respondents: | | 5026 | 4249 | 3460 |

Source: LSIA1

* p<0.05