**Tables**

Table 1: Prevalence of food insecurity in relation to household characteristics in Europe, 2007[[1]](#endnote-1)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All respondents** | | **Food insecure respondents** | | **Difference between groups** | |
| ***n*** | **Column proportion (%)** | ***n*** | **Row proportion (%)** | **Chi-squared test statistic** | **p-value** |
| **Age** |  | |  | | t(28998)  =-13.9 |  |
| Mean | 48.9 years | | 53.7 years | | p<.000 |
| **Gender** |  |  |  |  |  |  |
| Men | 12,452 | 42.9 | 995 | 8.0 |  |  |
| Women | 16,548 | 57.1 | 1,913 | 11.6 | 100.4 | p<.000 |
| **Household composition** | | | | | | |
| One person | 6,129 | 21.1 | 910 | 14.8 |  |  |
| Couple, no children | 8,232 | 28.4 | 641 | 7.8 |  |  |
| Couple with children | 6,105 | 21.1 | 406 | 6.7 |  |  |
| Lone parent with children | 978 | 3.4 | 134 | 13.7 |  |  |
| Other[[2]](#endnote-2), no children | 5,975 | 20.6 | 618 | 10.3 |  |  |
| Other, with children | 1,581 | 5.5 | 199 | 12.6 | 307.6 | p<.000 |
| **Income** | | | | | | |
| Lowest quartile | 4,897 | 16.9 | 1,068 | 21.8 |  |  |
| Quartile 2 | 4,953 | 17.1 | 662 | 13.4 |  |  |
| Quartile 3 | 5,034 | 17.4 | 384 | 7.6 |  |  |
| Highest quartile | 5,028 | 17.3 | 165 | 3.3 |  |  |
| Unknown | 9,088 | 31.3 | 629 | 6.9 | 1,200 | p<.000 |
| **Housing tenure** | | | | | | |
| Owner | 21,456 | 74.0 | 2,126 | 9.9 |  |  |
| Private renter | 3,627 | 12.5 | 312 | 8.6 |  |  |
| Social renter | 2,723 | 9.4 | 309 | 11.3 |  |  |
| Other tenure | 1,194 | 4.1 | 161 | 13.5 | 29.6 | p<.000 |
| **Education[[3]](#endnote-3)** | | | | | | |
| No education | 618 | 2.1 | 116 | 18.8 |  |  |
| Primary | 3,180 | 11.0 | 417 | 13.1 |  |  |
| Lower secondary | 5,459 | 18.8 | 727 | 13.3 |  |  |
| Upper secondary | 11,557 | 39.9 | 1,247 | 10.8 |  |  |
| Postsecondary | 2,533 | 8.7 | 175 | 6.9 |  |  |
| Tertiary (first level) | 5,284 | 18.2 | 217 | 4.1 |  |  |
| Tertiary (advanced level) | 369 | 1.3 | 9 | 2.4 | 415.0 | p<.000 |
| **Employment status** | | | | | | |
| Employed | 14,475 | 49.9 | 905 | 6.3 |  |  |
| Unemployed | 1,323 | 4.6 | 279 | 21.1 |  |  |
| Unable to work | 713 | 2.5 | 139 | 19.5 |  |  |
| Retired | 8,438 | 29.1 | 1,276 | 15.1 |  |  |
| Homemaker | 2,314 | 8.0 | 173 | 7.5 |  |  |
| Student | 1,305 | 4.5 | 90 | 6.9 |  |  |
| Other | 432 | 1.5 | 46 | 10.6 | 752.7 | p<.000 |
| **Urban-rural location** | | | | | | |
| Urban | 13,834 | 47.7 | 1,390 | 10.0 |  |  |
| Rural | 15,166 | 52.3 | 1,518 | 10.0 | 0.0 | p=0.913 |
| **Disability status** | | | | | | |
| No disability | 22,414 | 77.3 | 1,825 | 8.1 |  |  |
| Has a disability | 6,586 | 22.7 | 1,083 | 16.4 | 388.8 | p<.000 |
| **Total** | **29,000** | **100.0** | **2,908** | **10.0** |  |  |

Table 2: Multilevel logistic regression models predicting food insecurity from individual economic and demographic characteristics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
| *Regression coefficients (exponentiated coefficients, standard errors)* | | | |  |
| Intercept | 0.062\*\*\*  (0.017) | 0.048\*\*\* (0.012) | 0.007\*\*\* (0.002) | 0.029\*\*\* (0.009) |
| 2007 | 1.000 | 1.000 | 1.000 | 1.000 |
|  | (.) | (.) | (.) | (.) |
| 2011 | 1.521\*\*\* (0.174) | 1.497\*\*\* (0.160) | 1.494\*\*\* (0.164) | 1.215 (0.154) |
| Male |  | 1.000 | 1.000 | 1.000 |
|  |  | (.) | (.) | (.) |
| Female |  | 1.308\*\*\* (0.036) | 1.115\*\*\* (0.034) | 1.115\*\*\* (0.034) |
| Age |  | 1.014\*\*\* (0.001) | 1.002 (0.001) | 1.002 (0.001) |
| Age squared |  | 1.000\* (0.000) | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) |
| One person household |  |  | 1.622\*\*\* (0.068) | 1.619\*\*\* (0.067) |
| Couple, no children |  |  | 1.000 | 1.000 |
|  |  |  | (.) | (.) |
| Couple with children |  |  | 0.990 (0.053) | 0.988 (0.052) |
| Lone parent household |  |  | 1.560\*\*\* (0.128) | 1.559\*\*\* (0.128) |
| Other, no children |  |  | 1.081 (0.048) | 1.078 (0.047) |
| Other, with children |  |  | 1.106 (0.073) | 1.102 (0.072) |
| Highest income quartile |  |  | 1.000 | 1.000 |
|  |  |  | (.) | (.) |
| Quartile 2 |  |  | 2.046\*\*\*  (0.131) | 2.047\*\*\* (0.131) |
| Quartile 3 |  |  | 3.165\*\*\* (0.199) | 3.168\*\*\* (0.195) |
| Lowest income quartile |  |  | 5.683\*\*\* (0.353) | 5.690\*\*\* (0.348) |
| Missing income |  |  | 2.594\*\*\* (0.159) | 2.600\*\*\* (0.156) |
| Homeowner |  |  | 1.000 | 1.000 |
|  |  |  | (.) | (.) |
| Private renter |  |  | 1.686\*\*\* (0.084) | 1.684\*\*\* (0.084) |
| Social renter |  |  | 1.688\*\*\* (0.088) | 1.687\*\*\* (0.088) |
| Other tenure |  |  | 1.326\*\*\* (0.086) | 1.327\*\*\* (0.088) |
| No education |  |  | 3.933\*\*\* (0.856) | 4.166\*\*\* (1.079) |
| Primary |  |  | 2.433\*\*\* (0.487) | 2.584\*\*\* (0.636) |
| Lower secondary |  |  | 2.368\*\*\* (0.468) | 2.513\*\*\* (0.613) |
| Upper secondary |  |  | 1.748\*\* (0.344) | 1.859\* (0.452) |
| Postsecondary |  |  | 1.624\* (0.332) | 1.724\* (0.430) |
| Tertiary (first level) |  |  | 1.162 (0.232) | 1.233 (0.303) |
|  |  |  |  |  |
| Tertiary (advanced level) |  |  | 1.000 | 1.000 |
|  |  |  | (.) | (.) |
| Employed |  |  | 1.000 | 1.000 |
|  |  |  | (.) | (.) |
| Unemployed |  |  | 2.097\*\*\* (0.109) | 2.094\*\*\* (0.108) |
| Unable to work |  |  | 1.681\*\*\* (0.132) | 1.679\*\*\* (0.134) |
| Retired |  |  | 1.245\*\*\* (0.067) | 1.245\*\*\* (0.067) |
| Homemaker |  |  | 1.190\*\* (0.076) | 1.188\*\* (0.076) |
| Student |  |  | 0.935 (0.089) | 0.933 (0.088) |
| Other |  |  | 1.280\* (0.145) | 1.280\* (0.145) |
| Urban location |  |  | 1.000 | 1.000 |
|  |  |  | (.) | (.) |
| Rural location |  |  | 0.969 (0.029) | 0.968 (0.029) |
| No disability |  |  | 1.000 | 1.000 |
|  |  |  | (.) | (.) |
| Has a disability |  |  | 1.538\*\*\* (0.051) | 1.539\*\*\* (0.052) |
| GDP per capita |  |  |  | 1.000\*\*\* (0.000) |
| Unemployment rate |  |  |  | 1.036 (0.020) |
| *Variance components (level 2)* | | | |  |
| Intercept variance | 6.309\*\*\* (3.510) | 6.390\*\*\* (3.574) | 8.506\*\*\* (5.383) | 1.938\*\* (0.408) |
| Slope variance | 1.317\*\* (0.120) | 1.328\*\* (0.123) | 1.351\*\* (0.132) | 1.282\*\* (0.106) |
| Intercept–slope covariance | 0.765 (0.134) | 0.759 (0.133) | 0.787 (0.148) | 0.871 (0.087) |
| Variance partition coefficient (%) | 39.8 | 41.2 | 43.6 | 16.7 |
| *Goodness of fit* | | | |  |
| DIC | 37,947.14 | 37,471.12 | 33,833.29 | 33,833.2 |
| *n* | 63,168 | | | |

\* p<.05, \*\* p<.01, \*\*\* p<.001. DIC = Deviance Information Criterion

*†* Level 1 variance is a function of the mean in logistic models so is not estimated

Table 3: Multilevel logistic regression models predicting food insecurity from social benefit receipt, adjusted for underlying economic conditions and individual economic and demographic characteristics

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Model 5 | | Model 6 | Model 7 | Model 8 |
| *Regression coefficients (exponentiated coefficients, standard errors)* | | | | | |
| Intercept | | 0.033\*\*\* (0.011) | 0.034\*\*\* (0.015) | 0.029\*\*\* (0.010) | 0.036\*\*\* (0.019) |
| 2007 | | 1.000 | 1.000 | 1.000 | 1.000 |
| (.) | (.) | (.) | (.) |
| 2011 | | 1.215 (0.165) | 1.231 (0.181) | 1.268\* (0.153) | 1.254 (0.169) |
| GDP per capita | | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) |
| Unemployment rate | | 1.032 (0.025) | 1.027 (0.028) | 1.023 (0.021) | 1.022 (0.025) |
| Receives any benefits | | 1.120\*\* (0.045) |  |  |  |
| Receives pension | |  | 0.932 (0.044) |  |  |
| Receives child benefit | |  |  | 1.084 (0.051) |  |
| Receives out-of-work benefit | |  |  |  | 1.354\*\*\* (0.057) |
| *Variance components (level 2)* | | | | | |
| Intercept variance | | 1.922\*\* (0.394) | 1.967\*\* (0.430) | 1.937\*\* (0.407) | 2.000\*\* (0.464) |
| Slope variance | | 1.286\*\* (0.107) | 1.291\*\* (0.112) | 1.281\*\* (0.105) | 1.291\*\* (0.112) |
| Intercept–slope covariance | | 0.877 (0.087) | 0.870 (0.089) | 0.873 (0.087) | 0.865 (0.091) |
| Variance partition coefficient (%) | | 16.6 | 17.1 | 16.7 | 17.4 |
| *Goodness of fit* | | | | | |
| DIC | | 33,827 | 33,833 | 33,832 | 33,785 |
| *n* | | 63,168 | | | |

\* p<.05, \*\* p<.01, \*\*\* p<.001. DIC = Deviance Information Criterion

*†* Level 1 variance is a function of the mean in logistic models so is not estimated

All models adjusted for age, age squared, sex, household composition, income, housing tenure, education, employment status, rural-urban location and disability status.

Table 4: Multilevel logistic regression models predicting food insecurity from the value of social benefits among recipients, adjusted for underlying economic conditions and individual economic and demographic characteristics

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 9 | Model 10 | Model 11 | Model 12 | Model 13 | Model 14 |
|  | All recipients | All recipients | Pension recipients | Child benefit recipients | Out-of-work benefit recipients | Out-of-work benefit recipients |
| *Regression coefficients (exponentiated coefficients, standard errors)* | | | | | | |
| Intercept | 0.023\*\*\* (0.008) | 0.028\*\*\* (0.013) | 0.012\*\*\* (0.007) | 0.022\*\*\* (0.018) | 0.076\*\*\* (0.054) | 0.059\*\*\* (0.042) |
| 2007 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
|  | (.) | (.) | (.) | (.) | (.) | (.) |
| 2011 | 1.220 (0.164) | 1.130 (0.151) | 1.228 (0.200) | 1.095 (0.184) | 1.305\* (0.171) | 1.301 (0.179) |
| GDP per capita | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) | 1.000\*\*\* (0.000) |
| Unemployment rate | 1.020 (0.022) | 1.033 (0.027) | 1.015 (0.031) | 1.020 (0.030) | 1.026 (0.025) | 1.025 (0.025) |
| Total spending | 1.018 (0.817) |  |  |  |  |  |
| Disability spending |  | 0.332 (0.508) |  |  |  | 1.786 (1.997) |
| Family spending |  | 261.632\*\* (506.430) |  | 11.972\* (11.914) |  |  |
| Housing spending |  | 0.663 (0.578) |  |  |  |  |
| Old age spending |  | 0.709 (0.572) | 0.603 (0.402) |  |  |  |
| Healthcare spending |  | 0.189 (0.220) |  |  |  |  |
| Social exclusion spending |  | 3.235 (2.591) |  |  |  |  |
| Unemployment spending |  | 0.556 (0.405) |  |  | 1.162 (0.776) |  |
| *Variance components (level 2)* | | | | | | |
| Intercept variance | 2.048\*\* (0.475) | 1.610\*\* (0.277) | 1.988\*\* (0.500) | 1.552\* (0.277) | 1.814\* (0.426) | 1.846\* (0.445) |
| Slope variance | 1.235\*\* (0.092) | 1.258\*\* (0.110) | 1.282\* (0.129) | 1.373\* (0.176) | 1.177 (0.105) | 1.177 (0.102) |
| Intercept–slope covariance | 0.904 (0.090) | 0.851 (0.078) | 0.879 (0.108) | 0.968 (0.109) | 0.882 (0.103) | 0.877 (0.103) |
| Variance partition coefficient (%) | 33.4 | 34.8 | 38.7 | 32.1 | 40.1 | 31.0 |
|  | | | | | | |
| DIC | 24,797 | 24,796.9 | 16,103.7 | 7,050.7 | 6,358.2 | 6,357.6 |
| *n* | 42,732 | 42,732 | 26,236 | 14,461 | 8,806 | 8,806 |

\* p<.05, \*\* p<.01, \*\*\* p<.001. DIC = Deviance Information Criterion

*†* Level 1 variance is a function of the mean in logistic models so is not estimated

All models adjusted for age, age squared, sex, household composition, income, housing tenure, education, employment status, rural-urban location, and disability status.

**Figures**

*Figure 1: Prevalence of food insecurity in Europe, 2007 and 2011*

1. Equivalent figures for 2011 are available as supplementary analyses [↑](#endnote-ref-1)
2. ‘Other’ family types includes households containing multigenerational families, adult siblings, or unrelated adults living together. [↑](#endnote-ref-2)
3. Education is captured using the Harmonised International Standard Classification of Education categories. [↑](#endnote-ref-3)