**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)