**Table (1):** Descriptive Statistics for the Qualitative variables of Primary Interest

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Description** | **Units** | **2015****(N1 = 16028 )** | **2016****(N2 = 16369)** | **2017****(N3 = 13635)** | **Total****(N = 46032)** |
|  |  |  | Freq. | Rel. Freq. | Freq. | Rel. Freq. | Freq. | Rel. Freq. | Freq. | Rel. Freq. |
| FamMedExp | Medical Expenditure in past 12 months | 1: [$0 – $499] | 1114 | 40.6 | 874 | 39.3 | 706 | 37.5 | 2694 | 39.3 |
| 2: [$500 – $1,999] | 908 | 33.1 | 745 | 33.5 | 623 | 33.1 | 2276 | 33.2 |
| 3: $2,000 and more | 719 | 26.2 | 606 | 27.2 | 554 | 29.4 | 1879 | 27.4 |
| Earning2 | Annual Earnings | 1: $0 - $34,999 | 1124 | 40.0 | 795 | 35.7 | 630 | 33.5 | 2549 | 37.2 |
| 2: $35,000 – $64,999 | 852 | 31.1 | 694 | 31.2 | 589 | 31.3 | 2135 | 31.2 |
| 3: 65,000 and more | 765 | 27.9 | 736 | 33.1 | 664 | 35.3 | 2165 | 31.6 |
| ENGLANG2 | English Language Proficiency | 1:Very well | 1676 | 61.1 | 1426 | 64.1 | 1275 | 67.7 | 4377 | 63.9 |
| 2: Well | 652 | 23.8 | 535 | 24.0 | 411 | 21.8 | 1598 | 23.3 |
| 3: Not well | 413 | 15.1 | 264 | 11.9 | 197 | 10.5 | 874 | 12.8 |
| SRVY\_YR | Survey collection year | 1: 2015 | 2741 | 100 | ----- | ------ | ------ | ----- | 2741 | 40.02 |
| 2: 2016 | ----- | ----- | 2225 | 100 | ------ | ----- | 2225 | 32.49 |
| 3: 2017 | ----- | ----- | ----- | ----- | 1883 | 100 | 1883 | 27.49 |

**Note**: Freq. represents the absolute frequency distribution for the qualitative variables; while Rel. Freq. represents the relative frequencies in (%).

**Table (2):** Descriptive Statistics for the Socio-Demographic Qualitative Control variables

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Description** | **Units** | **2015****(N1 = 16028 )** | **2016****(N2 = 16369)** | **2017****(N3 = 13635)** | **Total****(N = 46032)** |
|  |  |  | Freq. | Rel. Freq. | Freq. | Rel. Freq. | Freq. | Rel. Freq. | Freq. | Rel. Freq. |
| SEX | Respondent Gender | 1: Male | 1492 | 54.4 | 1167 | 52.4 | 983 | 52.2 | 3642 | 53.2 |
| 2: Female | 1249 | 45.6 | 1058 | 47.6 | 900 | 47.8 | 3207 | 46.8 |
| RACRECI3 | Respondent Race | 1: White | 1527 | 55.7 | 1287 | 57.8 | 1012 | 53.7 | 3826 | 55.9 |
| 2: Black | 290 | 10.6 | 214 | 9.6 | 202 | 10.7 | 706 | 10.3 |
| 3: Asian | 891 | 32.5 | 692 | 31.1 | 638 | 33.9 | 2221 | 32.4 |
| 4: All other races | 33 | 1.2 | 32 | 1.4 | 31 | 1.6 | 96 | 1.4 |
| MaritStat | Respondent Marital Status | 1: Currently married | 1974 | 72.0 | 1647 | 74.0 | 1352 | 71.8 | 4973 | 72.6 |
| 2: Previously Married | 297 | 10.8 | 232 | 10.4 | 202 | 10.7 | 731 | 10.7 |
| 3: Never Married | 470 | 17.1 | 346 | 15.6 | 329 | 17.5 | 1145 | 16.7 |
| CITIZENP | Citizenship status | 1: US Citizen | 1774 | 64.7 | 1434 | 64.4 | 1294 | 68.7 | 4502 | 65.7 |
| 2: Not US Citizen | 967 | 35.3 | 791 | 35.6 | 589 | 31.3 | 2347 | 34.3 |
| REGION2 | Region of residency  | 1: South | 987 | 36.0 | 769 | 34.6 | 680 | 36.1 | 2436 | 35.6 |
| 2: Northwest | 430 | 15.7 | 410 | 18.4 | 301 | 16.0 | 1141 | 16.7 |
| 3: Midwest | 381 | 13.9 | 256 | 11.5 | 244 | 13.0 | 881 | 12.9 |
| 4: West | 943 | 34.4 | 790 | 35.5 | 658 | 34.9 | 2391 | 34.9 |

**Note**: Freq. represents the absolute frequency distribution for the qualitative variables; while Rel. Freq. represents the relative frequencies in (%).

**Table (3):** Descriptive Statistics for the Health Related Qualitative Control variables

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Description** | **Units** | **2015****(N1 = 16028 )** | **2016****(N2 = 16369)** | **2017****(N3 = 13635)** | **Total****(N = 46032)** |
|  |  |  | Freq. | Rel. Freq. | Freq. | Rel. Freq. | Freq. | Rel. Freq. | Freq. | Rel. Freq. |
| SINGLE2 | Have Extended coverage (Optional Insurance coverage) | 1: Yes | 1236 | 45.1 | 1087 | 48.9 | 1004 | 53.3 | 3327 | 48.6 |
| 2: No | 1505 | 54.9 | 1138 | 51.1 | 879 | 46.7 | 3522 | 51.4 |
| MEDBPAY | Medical Bills being paid off overtime | 1: Yes  | 638 | 23.3 | 506 | 22.7 | 459 | 24.4 | 1603 | 23.4 |
| 2: No | 2103 | 76.7 | 1719 | 77.3 | 1424 | 75.6 | 5246 | 76.6 |
| FSA | Have a flexible spending account | 1: yes have | 471 | 17.2 | 404 | 18.2 | 366 | 19.4 | 1241 | 18.1 |
| 2: no do not have | 2270 | 82.8 | 1821 | 81.8 | 1517 | 80.6 | 5608 | 81.9 |
| PHSTAT2 | Physical Health Status | 1: Excellent | 1012 | 36.9 | 808 | 36.3 | 705 | 37.4 | 2525 | 36.9 |
| 2: Very Good | 868 | 31.7 | 787 | 35.4 | 631 | 33.5 | 2286 | 33.4 |
| 3: Good | 704 | 25.7 | 496 | 22.3 | 438 | 23.3 | 1638 | 23.9 |
| 4: Fair or Poor | 157 | 5.7 | 134 | 6.0 | 109 | 5.8 | 400 | 5.8 |

**Note**: Freq. represents the absolute frequency distribution for the qualitative variables; while Rel. Freq. represents the relative frequencies in (%).

**Table (4):** Descriptive Statistics for the Quantitative Control Variables

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Description** | **Units** | **2015****(N1 = 16028 )** | **2016****(N2 = 16369)** | **2017****(N3 = 13635)** | **Total****(N = 46032)** |
|  |  |  | Mean | s.d. | Mean | s.d. | Mean | s.d. | Mean | s.d. |
| WRKHRS2 | Hours Worked  | (in a week) | 41.36 | 11.31 | 41.34 | 10.78 | 41.60 | 11.32 | 41.42 | 11.14 |
| AGE\_P | AGE | (in years) | 44.11 | 11.54 | 44.42 | 11.70 | 44.40 | 11.52 | 44.29 | 11.59 |
| EDUC1 | Education | (in levels) | 15.47 | 4.01 | 15.67 | 3.94 | 16.11 | 3.47 | 15.71 | 3.85 |
| HICOSTR1 | Annual Premium Cost | (in $100) | 37.91 | 33.75 | 40.18 | 34.47 | 41.12 | 37.89 | 39.73 | 35.19 |
| WTFA | Respondent Final Annual Weight in the Data  | (in 100) | 28.96 | 17.06 | 38.18 | 24.34 | 45.96 | 22.67 | 36.63 | 22.32 |

**Note**: s.d. represents the standard deviation of the quantitative variable

**Table (5):** Chi-Square test of independence between the three dimensions of Immigrants Integration Using the Pooled Sample

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Units** | English Language Proficiency ( ENGLANG2) | Annual Earnings(Earning2) |
|  |  | X-squared | df | p-value | X-squared | df | p-value |
| Medical Expenditure in past 12 months(FamMedExp) | 1: [$0 – $499]2: [$500 – $1,999]3: $2,000 and more | 43.911 | 4 | 6.693e-09 | 52.833 | 4 | 9.234e-11 |
| Annual Earnings(Earning2) | 1: [$0 - $34,999]2: [$35,000 – $64,999]3: 65,000 and more | 774.49 | 4 | < 2.2e-16 |  |

**Table (6):** Bivariate Descriptive Statistics for the three dimensions of Immigrants Integration Using the Pooled Sample

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Units** | English Language Proficiency ( ENGLANG2) | Annual Earnings(Earning2) |
|  |  | 1:Very well | 2: Well | 3: Not well | 1: [$0 - $34,999] | 2: [$35,000 – $64,999] | 3: 65,000 and more |
| Medical Expenditure in past 12 months(FamMedExp) | 1: [$0 – $499]2: [$500 – $1,999]3: $2,000 and more | 37.0 | 40.9 | 48.3 | 43.8 | 38.7 | 34.6 |
| 34.0 | 33.7 | 28.7 | 32.1 | 34.3 | 33.5 |
| 29.0 | 25.4 | 23.0 | 24.1 | 26.9 | 31.8 |
| Annual Earnings(Earning2) | 1: [$0 - $34,999]2: [$35,000 – $64,999]3: 65,000 and more | 27.7 | 43.8 | 72.8 |
| 32.4 | 32.7 | 22.4 |
| 39.9 | 23.5 | 4.8 |

**Table (7)** Posterior estimates with 95% CI for the random regional and annual variations in Immigrants families Earnings and Medical Expenditures

|  |  |  |
| --- | --- | --- |
|  **Random effects****Dependent variables** | REGION2 | SRVY\_YR |
| **Posterior Mean** | **(95% CI)** | **Posterior Mean** | **(95% CI)** |
| FamMedExp | 1.71 | (2.18e-17 ; 6.41) | 0.11 | ( 2.20e-17 ; 0.07 ) |
| Earning2 | 7.82 | (8.30e-06 ; 26.75) | 21.56 | (4.02e-17 ; 40.78 ) |

**Note:** These correspond to the point and interval estimates of the G-structure as presented in equations (9) and (10).

|  |  |  |
| --- | --- | --- |
|  | **Posterior Mean** | **(95% CI)** |
| **Variance** of “FamMedExp” | 403.72 | (3.96 ; 851.94) |
| **Covariance** between “FamMedExp” and “Earning2” | 31.31 | (0.27 ; 84.57) |
| **Variance** of “Earning2” | 474.22 | (9.29 ; 1432.65) |
| **Correlation Coefficient**  | $\tilde{ρ}=$ 0.072 |

**Table (8)**: Residual variance-covariance matrix for the BOP model in equation (1) and (6)

**Note:** This corresponds to the point and interval estimates of the R structure

**Table (9)** Posterior estimates with 95% CI for the fixed effects the BOP model of Immigrants families Earnings and Medical Expenditures

|  |  |  |
| --- | --- | --- |
|   **Units****Fixed Effects** | FamMedExp | Earning2 |
| **Posterior Mean** | **(95% CI)** | **Posterior Mean** | **(95% CI)** |
| ENGLANG | 1: Very well2: Well3: Not well | 8.09 | (0.73 ;16.49 ) | -44.83 | (-90.32 ; -7.35) |
| 6.09 | (0.14 ;13.41 ) | -50.66 | (-102.20 ; -8.73) |
| 4.32 | (0.71;11.04) | -56.97 | ( -114.56 ; -9.95) |
| ***Socio-Demographic control variables*** |  |  |  |  |  |
| Sex | 2: Female | 1.27 | (0.03 ; 2.98) | -10.94 | (-21.99 ; -1.91) |
| Race | 2: Black3: Asian4: All other races | -3.78 | (-7.11 ; -0.40) | -2.19 | (-5.88 ; -0.06) |
| -1.91 | (-3.92 ; -0.13) | 5.33 | (0.84 ; 10.95) |
| -1.51 | (-7.49 ; 3.00) | -1.16 | (-7.85 ; 4.34) |
| MaritStat | 2: Previously Married3: Never Married | -5.53 | (-10.02 ; -0.62) | 1.13 | (-0.68 ; 4.15) |
| -4.66 | (-8.45 ; -0.57) | -3.81 | (-8.31 ; -0.47) |
| CITIZENSHIP | 2: Not US citizen | -0.64 | (-2.19 ; 0.58) | -0.91 | (-2.99 ; 0.40) |
| ***Health related control variables*** |  |  |  |  |  |
| SINGLE2 | 2: No | -1.82 | (-3.75 ; -0.15) | -4.43 | (-9.19 ; -0.68) |
| MEDBPAY | 2: No | -13.90 | (-23.30 ; -2.40) | 5.35 | (0.83 ; 11.06) |
| FSA | 2: No | -5.73 | (-9.94 ; -0.67) | -6.84 | (-13.96 ; -1.10) |
| PHSTAT2 | 2:Very good3: Good4: Fair Poor | 1.70 | (0.08 ; 3.69) | -0.22 | (-2.01 ; 1.34) |
| 3.96 | (0.41 ; 7.21) | -2.61 | (-6.09 ; -0.25) |
| 7.72 | (0.86 ; 13.83) | -2.78 | (-7.43 ; -0.21) |
| ***Quantitative control variables*** |  |  |  |  |  |
| WRKHRS2 |  | 0.03 | (-0.02 ; 0.10) | 0.60 | (0.10 ; 1.20) |
| AGE\_P |  | 0.12 | (0.01 ; 0.23) | 0.16 | (0.02 ; 0.34) |
| EDUC1 |  | 0.26 | (0.02 ; 0.52) | 1.94 | (0.34 ; 3.89) |
| HISCOSTR2 |  | 0.10 | (0.01 ; 0.17) | 0.07 | (0.01 ; 0.15) |
| ***Cut-off points*** |  | $\hat{μ\_{2}}$= 17.67 | (2.24 ; 28.57) | $\hat{δ\_{2}}$ = 20.57 | (3.79 ; 41.46) |
| ***MCMC Algorithm specification*** |  |  |  |  |  |
| Number of Iterations | 100,000 |
| Burn-in period | 15,000 |
| Thinning interval | 10 |
| Effective Sample Size | 8500 |