**Technical Appendix**

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| Appendix Table 1. Multiple Regression Estimates for Predicting FYGPA, Across AP Participation and Performance | | | | |
|  |  |  | Across Number of APs Taken | Across Number of APs Scoring 3 or Higher |
| AP Performance, Number Taken or Number Scoring 3 or Higher, Relative to None | 1 |  | 0.045\*\*\* | 0.112\*\*\* |
|  |  | (0.003) | (0.003) |
| 2 |  | 0.069\*\*\* | 0.151\*\*\* |
|  |  | (0.003) | (0.004) |
| 3 |  | 0.080\*\*\* | 0.179\*\*\* |
|  |  | (0.004) | (0.004) |
| 4 |  | 0.086\*\*\* | 0.209\*\*\* |
|  |  | (0.004) | (0.005) |
| 5 |  | 0.089\*\*\* | 0.217\*\*\* |
|  |  | (0.004) | (0.005) |
| 6 |  | 0.089\*\*\* | 0.231\*\*\* |
|  |  | (0.005) | (0.006) |
| 7 |  | 0.086\*\*\* | 0.238\*\*\* |
|  |  | (0.005) | (0.007) |
| 8 |  | 0.089\*\*\* | 0.247\*\*\* |
|  |  | (0.006) | (0.008) |
| 9 or More |  | 0.093\*\*\* | 0.274\*\*\* |
|  |  | (0.006) | (0.007) |
| Student Academics | HS GPA |  | 0.393\*\*\* | 0.382\*\*\* |
|  |  | (0.002) | (0.002) |
| SAT Score |  | 0.001\*\*\* | 0.001\*\*\* |
|  |  | (0.000) | (0.000) |
| Cohort Fixed Effects, Relative to 2010 | 2011 Cohort Fixed Effect |  | 0.039\*\*\* | 0.037\*\*\* |
|  |  | (0.002) | (0.002) |
| 2012 Cohort Fixed Effect |  | 0.052\*\*\* | 0.048\*\*\* |
|  |  | (0.002) | (0.002) |
| Levels of Intensity of AP Offerings at a High School, Relative to None | Low: 1 - 5 APs Offered |  | -0.007 | -0.015\*\*\* |
|  |  | (0.006) | (0.006) |
| Medium: 6 - 10 APs Offered |  | -0.001 | -0.019\*\*\* |
|  |  | (0.006) | (0.005) |
| High: 11 - 20 APs Offered |  | 0.016\*\*\* | -0.014\*\*\* |
|  |  | (0.005) | (0.005) |
| Very High: 21 or More APs Offered |  | 0.036\*\*\* | -0.008 |
|  |  | (0.006) | (0.006) |
|  | Constant |  | 0.245\*\*\* | 0.530\*\*\* |
|  |  |  | (0.014) | (0.015) |
|  |  |  |  |  |
|  | N |  | 435935 | 435935 |
|  | R-Squared |  | 0.272 | 0.278 |
|  | F |  | 4929.973 | 5087.652 |
| Note: SAT Scores are on the 2400 scale. | | | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | Appendix Table 2. Odds Ratios Estimates for Predicting Four Year BA Attainment, Across AP Participation and Performance | | | | | |  |  |  | Across Number of APs Taken | Across Number of APs Scoring 3 or Higher | | AP Performance, Number Taken or Number Scoring 3 or Higher, Relative to None | 1 |  | 1.141\*\*\* | 1.245\*\*\* | |  |  | (0.012) | (0.013) | | 2 |  | 1.232\*\*\* | 1.384\*\*\* | |  |  | (0.014) | (0.017) | | 3 |  | 1.285\*\*\* | 1.497\*\*\* | |  |  | (0.016) | (0.021) | | 4 |  | 1.350\*\*\* | 1.596\*\*\* | |  |  | (0.018) | (0.025) | | 5 |  | 1.410\*\*\* | 1.692\*\*\* | |  |  | (0.021) | (0.030) | | 6 |  | 1.427\*\*\* | 1.715\*\*\* | |  |  | (0.023) | (0.035) | | 7 |  | 1.420\*\*\* | 1.812\*\*\* | |  |  | (0.026) | (0.044) | | 8 |  | 1.431\*\*\* | 1.845\*\*\* | |  |  | (0.031) | (0.055) | | 9 or More |  | 1.436\*\*\* | 1.897\*\*\* | |  |  | (0.028) | (0.049) | | Student Academics | HS GPA |  | 1.812\*\*\* | 1.805\*\*\* | |  |  | (0.014) | (0.014) | | SAT Score |  | 1.001\*\*\* | 1.001\*\*\* | |  |  | (0.000) | (0.000) | | Cohort Fixed Effects, Relative to 2010 | 2011 Cohort Fixed Effect |  | 1.166\*\*\* | 1.165\*\*\* | |  |  | (0.009) | (0.009) | | 2012 Cohort Fixed Effect |  | 1.231\*\*\* | 1.225\*\*\* | |  |  | (0.010) | (0.010) | | Levels of Intensity of AP Offerings at a High School, Relative to None | Low: 1 - 5 APs Offered |  | 0.977 | 0.992 | |  |  | (0.019) | (0.019) | | Medium: 6 - 10 APs Offered |  | 1.033\* | 1.045\*\* | |  |  | (0.019) | (0.019) | | High: 11 - 20 APs Offered |  | 1.134\*\*\* | 1.129\*\*\* | |  |  | (0.021) | (0.020) | | Very High: 21 or More APs Offered |  | 1.093\*\*\* | 1.064\*\*\* | |  |  | (0.021) | (0.020) | |  | Constant |  | 0.005\*\*\* | 0.008\*\*\* | |  |  |  | (0.000) | (0.000) | |  |  |  |  |  | |  | N |  | 442346 | 442346 | |  | Psuedo R-Squared |  | 0.101 | 0.103 | |  |  |  |  |  | | Note: SAT Scores are on the 2400 scale. | | | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Appendix Table 3. Estimated Differences in FYGPA Across Number of APs Exams Taken and Number of AP Exams Scoring 3 or Higher | | | | | | Number of AP Exams | | | | | | Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | | | ( 1 vs 0 ) | 0.045 | 0.000 | [0.038 | 0.051 ] | | ( 2 vs 1 ) | 0.024 | 0.000 | [0.017 | 0.031 ] | | ( 3 vs 2 ) | 0.011 | 0.005 | [0.003 | 0.019 ] | | ( 4 vs 3 ) | 0.006 | 0.137 | [-0.002 | 0.015 ] | | ( 5 vs 4 ) | 0.003 | 0.492 | [-0.006 | 0.012 ] | | ( 6 vs 5 ) | -0.001 | 0.874 | [-0.011 | 0.009 ] | | ( 7 vs 6 ) | -0.003 | 0.658 | [-0.014 | 0.009 ] | | ( 8 vs 7 ) | 0.003 | 0.690 | [-0.011 | 0.017 ] | | ( 9 vs 8 ) | 0.004 | 0.602 | [-0.010 | 0.018 ] | |  |  |  |  |  | | Number of AP Exams Scoring 3 or Higher | | | | | | Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | | | ( 1 vs 0 ) | 0.112 | 0.000 | [0.107 | 0.118 ] | | ( 2 vs 1 ) | 0.039 | 0.000 | [0.031 | 0.046 ] | | ( 3 vs 2 ) | 0.028 | 0.000 | [0.019 | 0.037 ] | | ( 4 vs 3 ) | 0.030 | 0.000 | [0.020 | 0.040 ] | | ( 5 vs 4 ) | 0.008 | 0.151 | [-0.003 | 0.019 ] | | ( 6 vs 5 ) | 0.013 | 0.047 | [0.000 | 0.026 ] | | ( 7 vs 6 ) | 0.008 | 0.313 | [-0.007 | 0.023 ] | | ( 8 vs 7 ) | 0.009 | 0.356 | [-0.010 | 0.027 ] | | ( 9 vs 8 ) | 0.027 | 0.005 | [0.008 | 0.045 ] | |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Appendix Table 4. Estimated Differences in Four-Year BA Attainment Across Number of APs Exams Taken and Number of AP Exams Scoring Three or Higher | | | | | | Number of AP Exams | | | | | | Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | | | ( 1 vs 0 ) | 0.032 | 0.000 | [0.027 | 0.037 ] | | ( 2 vs 1 ) | 0.019 | 0.000 | [0.013 | 0.025 ] | | ( 3 vs 2 ) | 0.010 | 0.002 | [0.004 | 0.017 ] | | ( 4 vs 3 ) | 0.012 | 0.001 | [0.005 | 0.019 ] | | ( 5 vs 4 ) | 0.011 | 0.007 | [0.003 | 0.019 ] | | ( 6 vs 5 ) | 0.003 | 0.505 | [-0.006 | 0.012 ] | | ( 7 vs 6 ) | -0.001 | 0.813 | [-0.011 | 0.009 ] | | ( 8 vs 7 ) | 0.002 | 0.741 | [-0.010 | 0.014 ] | | ( 9 vs 8 ) | 0.001 | 0.909 | [-0.012 | 0.013 ] | |  |  |  |  |  | | Number of AP Exams Scoring 3 or Higher | | | | | | Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | | | ( 1 vs 0 ) | 0.053 | 0.000 | [0.048 | 0.058 ] | | ( 2 vs 1 ) | 0.026 | 0.000 | [0.020 | 0.033 ] | | ( 3 vs 2 ) | 0.020 | 0.000 | [0.012 | 0.027 ] | | ( 4 vs 3 ) | 0.016 | 0.000 | [0.007 | 0.025 ] | | ( 5 vs 4 ) | 0.015 | 0.004 | [0.005 | 0.025 ] | | ( 6 vs 5 ) | 0.003 | 0.568 | [-0.008 | 0.015 ] | | ( 7 vs 6 ) | 0.014 | 0.054 | [0.000 | 0.028 ] | | ( 8 vs 7 ) | 0.004 | 0.610 | [-0.013 | 0.022 ] | | ( 9 vs 8 ) | 0.007 | 0.439 | [-0.011 | 0.024 ] | |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Appendix Table 5. Multiple Regression Estimates for Predicting FYGPA Across AP Participation with SAT Score | | | | | |  |  |  | Across Number of APs Taken | Across Number of APs Scoring 3 or Higher | | AP Performance, Number Taken or Number Scoring 3 or Higher, Relative to None | 1 |  | 0.107\*\*\* | 0.437\*\*\* | |  |  | (0.023) | (0.025) | | 2 |  | 0.041\* | 0.572\*\*\* | |  |  | (0.025) | (0.033) | | 3 |  | 0.040 | 0.699\*\*\* | |  |  | (0.027) | (0.039) | | 4 |  | -0.029 | 0.698\*\*\* | |  |  | (0.029) | (0.045) | | 5 |  | 0.004 | 0.764\*\*\* | |  |  | (0.032) | (0.052) | | 6 |  | 0.056 | 0.791\*\*\* | |  |  | (0.036) | (0.063) | | 7 |  | 0.012 | 0.737\*\*\* | |  |  | (0.043) | (0.076) | | 8 |  | 0.090\* | 0.856\*\*\* | |  |  | (0.053) | (0.096) | | 9 or More |  | 0.122\*\*\* | 0.742\*\*\* | |  |  | (0.045) | (0.081) | | Interaction between AP Performance and SAT | 1 x SAT Score |  | -0.000\*\*\* | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 2 x SAT Score |  | 0.000 | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 3 x SAT Score |  | 0.000 | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 4 x SAT Score |  | 0.000\*\*\* | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 5 x SAT Score |  | 0.000\*\*\* | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 6 x SAT Score |  | 0.000 | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 7 x SAT Score |  | 0.000\* | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 8 x SAT Score |  | 0.000 | -0.000\*\*\* | |  |  | (0.000) | (0.000) | | 9 or More x SAT Score |  | -0.000 | -0.000\*\*\* | |  |  | (0.000) | (0.000) | |  | SAT Score |  | 0.001\*\*\* | 0.001\*\*\* | |  |  |  | (0.000) | (0.000) | |  | HS GPA |  | 0.393\*\*\* | 0.376\*\*\* | |  |  |  | (0.002) | (0.002) | | Cohort Fixed Effects, Relative to 2010 | 2011 Cohort Fixed Effect |  | 0.039\*\*\* | 0.036\*\*\* | |  |  | (0.002) | (0.002) | | 2012 Cohort Fixed Effect |  | 0.052\*\*\* | 0.046\*\*\* | |  |  | (0.002) | (0.002) | | Levels of Intensity of AP Offerings at a High School, Relative to None | Low: 1 - 5 APs Offered |  | -0.008 | -0.006 | |  |  | (0.006) | (0.006) | | Medium: 6 - 10 APs Offered |  | -0.002 | -0.012\*\* | |  |  | (0.006) | (0.005) | | High: 11 - 20 APs Offered |  | 0.015\*\*\* | -0.010\* | |  |  | (0.005) | (0.005) | | Very High: 21 or More APs Offered |  | 0.035\*\*\* | -0.006 | |  |  | (0.006) | (0.006) | |  | Constant |  | 0.261\*\*\* | 0.371\*\*\* | |  |  |  | (0.017) | (0.016) | |  |  |  |  |  | |  | N |  | 435935 | 435935 | |  | R-Squared |  | 0.272 | 0.279 | |  | F |  | 3874.858 | 4019.305 |  |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | | Appendix Table 6. Odds Ratios Estimates for Predicting Four Year BA Attainment, Across AP Participation with SAT Score | | | | | |  |  |  | Across Number of APs Taken | Across Number of APs Scoring 3 or Higher | | AP Performance, Number Taken or Number Scoring 3 or Higher, Relative to None | 1 |  | 1.648\*\*\* | 3.748\*\*\* | |  |  | (0.132) | (0.316) | | 2 |  | 1.770\*\*\* | 5.402\*\*\* | |  |  | (0.153) | (0.595) | | 3 |  | 1.744\*\*\* | 6.691\*\*\* | |  |  | (0.165) | (0.901) | | 4 |  | 1.463\*\*\* | 7.117\*\*\* | |  |  | (0.150) | (1.115) | | 5 |  | 1.798\*\*\* | 6.142\*\*\* | |  |  | (0.202) | (1.134) | | 6 |  | 1.500\*\*\* | 6.292\*\*\* | |  |  | (0.192) | (1.418) | | 7 |  | 1.422\*\* | 7.147\*\*\* | |  |  | (0.215) | (1.980) | | 8 |  | 1.474\*\* | 7.247\*\*\* | |  |  | (0.273) | (2.591) | | 9 or More |  | 1.709\*\*\* | 7.231\*\*\* | |  |  | (0.272) | (2.209) | | Interaction between AP Performance and SAT | 1 x SAT Score |  | 1.000\*\*\* | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 2 x SAT Score |  | 1.000\*\*\* | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 3 x SAT Score |  | 1.000\*\*\* | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 4 x SAT Score |  | 1.000 | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 5 x SAT Score |  | 1.000\*\* | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 6 x SAT Score |  | 1.000 | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 7 x SAT Score |  | 1.000 | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 8 x SAT Score |  | 1.000 | 0.999\*\*\* | |  |  | (0.000) | (0.000) | | 9 or More x SAT Score |  | 1.000 | 0.999\*\*\* | |  |  | (0.000) | (0.000) | |  | SAT Score |  | 1.002\*\*\* | 1.002\*\*\* | |  |  |  | (0.000) | (0.000) | |  | HS GPA |  | 1.809\*\*\* | 1.782\*\*\* | |  |  |  | (0.014) | (0.014) | | Cohort Fixed Effects, Relative to 2010 | 2011 Cohort Fixed Effect |  | 1.165\*\*\* | 1.161\*\*\* | |  |  | (0.009) | (0.009) | | 2012 Cohort Fixed Effect |  | 1.230\*\*\* | 1.220\*\*\* | |  |  | (0.010) | (0.010) | | Levels of Intensity of AP Offerings at a High School, Relative to None | Low: 1 - 5 APs Offered |  | 0.984 | 1.019 | |  |  | (0.019) | (0.019) | | Medium: 6 - 10 APs Offered |  | 1.040\*\* | 1.068\*\*\* | |  |  | (0.020) | (0.020) | | High: 11 - 20 APs Offered |  | 1.141\*\*\* | 1.147\*\*\* | |  |  | (0.021) | (0.021) | | Very High: 21 or More APs Offered |  | 1.100\*\*\* | 1.075\*\*\* | |  |  | (0.022) | (0.021) | |  | Constant |  | 0.004\*\*\* | 0.005\*\*\* | |  |  |  | (0.000) | (0.000) | |  |  |  |  |  | |  | N |  | 442346 | 442346 | |  | Psuedo-R-Squared |  | 0.101 | 0.103 | |  |  |  |  |  | | | | | |

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| Appendix Table 7. Estimated Differences in FYGPA Across Number of APs Exams Taken and Number of AP Exams Scoring 3 or Higher, Across SAT Score Categories | | | | |
| Number of AP Exams - SAT Below 50th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.051 | 0.000 | [0.044 | 0.058 ] |
| ( 2 vs 1 ) | 0.016 | 0.001 | [0.006 | 0.025 ] |
| ( 3 vs 2 ) | 0.009 | 0.131 | [-0.003 | 0.021 ] |
| ( 4 vs 3 ) | -0.007 | 0.344 | [-0.021 | 0.007 ] |
| ( 5 vs 4 ) | 0.007 | 0.427 | [-0.010 | 0.024 ] |
| ( 6 vs 5 ) | 0.009 | 0.385 | [-0.011 | 0.029 ] |
| ( 7 vs 6 ) | -0.012 | 0.357 | [-0.037 | 0.013 ] |
| ( 8 vs 7 ) | 0.019 | 0.235 | [-0.013 | 0.052 ] |
| ( 9 vs 8 ) | 0.011 | 0.517 | [-0.023 | 0.046 ] |
| Number of AP Exams Scoring 3 or Higher - SAT Below 50th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.138 | 0.000 | [0.130 | 0.146 ] |
| ( 2 vs 1 ) | 0.062 | 0.000 | [0.048 | 0.075 ] |
| ( 3 vs 2 ) | 0.055 | 0.000 | [0.035 | 0.074 ] |
| ( 4 vs 3 ) | 0.030 | 0.019 | [0.005 | 0.056 ] |
| ( 5 vs 4 ) | 0.028 | 0.085 | [-0.004 | 0.059 ] |
| ( 6 vs 5 ) | 0.022 | 0.280 | [-0.018 | 0.062 ] |
| ( 7 vs 6 ) | -0.003 | 0.900 | [-0.054 | 0.047 ] |
| ( 8 vs 7 ) | 0.043 | 0.205 | [-0.023 | 0.109 ] |
| ( 9 vs 8 ) | -0.005 | 0.887 | [-0.076 | 0.066 ] |
|  |  |  |  |  |
| Number of AP Exams - SAT Between 50th and 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.036 | 0.000 | [0.026 | 0.046 ] |
| ( 2 vs 1 ) | 0.037 | 0.000 | [0.027 | 0.048 ] |
| ( 3 vs 2 ) | 0.012 | 0.020 | [0.002 | 0.022 ] |
| ( 4 vs 3 ) | 0.010 | 0.051 | [0.000 | 0.019 ] |
| ( 5 vs 4 ) | 0.000 | 0.998 | [-0.010 | 0.010 ] |
| ( 6 vs 5 ) | -0.002 | 0.642 | [-0.013 | 0.008 ] |
| ( 7 vs 6 ) | -0.003 | 0.574 | [-0.015 | 0.008 ] |
| ( 8 vs 7 ) | 0.004 | 0.585 | [-0.010 | 0.018 ] |
| ( 9 vs 8 ) | 0.006 | 0.439 | [-0.009 | 0.021 ] |
| Number of AP Exams Scoring 3 or Higher - SAT Between 50th and 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.059 | 0.000 | [0.050 | 0.068 ] |
| ( 2 vs 1 ) | 0.042 | 0.000 | [0.033 | 0.052 ] |
| ( 3 vs 2 ) | 0.035 | 0.000 | [0.026 | 0.045 ] |
| ( 4 vs 3 ) | 0.039 | 0.000 | [0.029 | 0.049 ] |
| ( 5 vs 4 ) | 0.018 | 0.003 | [0.006 | 0.029 ] |
| ( 6 vs 5 ) | 0.021 | 0.005 | [0.006 | 0.035 ] |
| ( 7 vs 6 ) | 0.010 | 0.289 | [-0.009 | 0.029 ] |
| ( 8 vs 7 ) | 0.023 | 0.084 | [-0.003 | 0.048 ] |
| ( 9 vs 8 ) | 0.024 | 0.113 | [-0.006 | 0.053 ] |
|  |  |  |  |  |
| Number of AP Exams - SAT Above 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.023 | 0.013 | [0.005 | 0.042 ] |
| ( 2 vs 1 ) | 0.056 | 0.000 | [0.035 | 0.077 ] |
| ( 3 vs 2 ) | 0.014 | 0.170 | [-0.006 | 0.034 ] |
| ( 4 vs 3 ) | 0.024 | 0.019 | [0.004 | 0.044 ] |
| ( 5 vs 4 ) | -0.006 | 0.553 | [-0.026 | 0.014 ] |
| ( 6 vs 5 ) | -0.012 | 0.231 | [-0.033 | 0.008 ] |
| ( 7 vs 6 ) | 0.004 | 0.723 | [-0.018 | 0.026 ] |
| ( 8 vs 7 ) | -0.009 | 0.446 | [-0.034 | 0.015 ] |
| ( 9 vs 8 ) | 0.001 | 0.913 | [-0.021 | 0.024 ] |
|  |  |  |  |  |
| Number of AP Exams Scoring 3 or Higher - SAT Above 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | -0.010 | 0.266 | [-0.027 | 0.007 ] |
| ( 2 vs 1 ) | 0.026 | 0.019 | [0.004 | 0.047 ] |
| ( 3 vs 2 ) | 0.019 | 0.109 | [-0.004 | 0.041 ] |
| ( 4 vs 3 ) | 0.046 | 0.000 | [0.023 | 0.069 ] |
| ( 5 vs 4 ) | 0.009 | 0.455 | [-0.015 | 0.032 ] |
| ( 6 vs 5 ) | 0.019 | 0.122 | [-0.005 | 0.044 ] |
| ( 7 vs 6 ) | 0.022 | 0.102 | [-0.004 | 0.048 ] |
| ( 8 vs 7 ) | 0.005 | 0.735 | [-0.024 | 0.034 ] |
| ( 9 vs 8 ) | 0.049 | 0.000 | [0.022 | 0.075 ] |

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| Appendix Table 8. Estimated Differences in Four-Year BA Attainment Across Number of APs Exams Taken and Number of AP Exams Scoring Three or Higher, Across SAT Score Categories | | | | |
| Number of AP Exams - SAT Below 50th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.034 | 0.000 | [0.028 | 0.039 ] |
| ( 2 vs 1 ) | 0.018 | 0.000 | [0.011 | 0.026 ] |
| ( 3 vs 2 ) | 0.009 | 0.053 | [0.000 | 0.018 ] |
| ( 4 vs 3 ) | 0.003 | 0.541 | [-0.008 | 0.014 ] |
| ( 5 vs 4 ) | 0.017 | 0.013 | [0.004 | 0.030 ] |
| ( 6 vs 5 ) | -0.006 | 0.476 | [-0.022 | 0.010 ] |
| ( 7 vs 6 ) | -0.004 | 0.705 | [-0.024 | 0.016 ] |
| ( 8 vs 7 ) | 0.003 | 0.825 | [-0.023 | 0.028 ] |
| ( 9 vs 8 ) | 0.008 | 0.553 | [-0.019 | 0.036 ] |
| Number of AP Exams Scoring 3 or Higher - SAT Below 50th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.070 | 0.000 | [0.064 | 0.076 ] |
| ( 2 vs 1 ) | 0.041 | 0.000 | [0.030 | 0.052 ] |
| ( 3 vs 2 ) | 0.031 | 0.000 | [0.015 | 0.047 ] |
| ( 4 vs 3 ) | 0.020 | 0.062 | [-0.001 | 0.042 ] |
| ( 5 vs 4 ) | 0.007 | 0.601 | [-0.020 | 0.035 ] |
| ( 6 vs 5 ) | 0.007 | 0.707 | [-0.028 | 0.042 ] |
| ( 7 vs 6 ) | 0.021 | 0.369 | [-0.025 | 0.066 ] |
| ( 8 vs 7 ) | 0.007 | 0.825 | [-0.054 | 0.067 ] |
| ( 9 vs 8 ) | 0.009 | 0.780 | [-0.056 | 0.075 ] |
|  |  |  |  |  |
| Number of AP Exams - SAT Between 50th and 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.016 | 0.000 | [0.008 | 0.025 ] |
| ( 2 vs 1 ) | 0.021 | 0.000 | [0.013 | 0.030 ] |
| ( 3 vs 2 ) | 0.013 | 0.002 | [0.005 | 0.022 ] |
| ( 4 vs 3 ) | 0.016 | 0.000 | [0.008 | 0.024 ] |
| ( 5 vs 4 ) | 0.009 | 0.035 | [0.001 | 0.017 ] |
| ( 6 vs 5 ) | 0.004 | 0.368 | [-0.005 | 0.013 ] |
| ( 7 vs 6 ) | -0.002 | 0.752 | [-0.012 | 0.008 ] |
| ( 8 vs 7 ) | 0.002 | 0.809 | [-0.011 | 0.014 ] |
| ( 9 vs 8 ) | 0.001 | 0.824 | [-0.011 | 0.014 ] |
| Number of AP Exams Scoring 3 or Higher - SAT Between 50th and 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | 0.012 | 0.001 | [0.005 | 0.020 ] |
| ( 2 vs 1 ) | 0.030 | 0.000 | [0.022 | 0.038 ] |
| ( 3 vs 2 ) | 0.026 | 0.000 | [0.018 | 0.034 ] |
| ( 4 vs 3 ) | 0.022 | 0.000 | [0.013 | 0.030 ] |
| ( 5 vs 4 ) | 0.019 | 0.000 | [0.009 | 0.028 ] |
| ( 6 vs 5 ) | 0.007 | 0.284 | [-0.006 | 0.019 ] |
| ( 7 vs 6 ) | 0.017 | 0.035 | [0.001 | 0.033 ] |
| ( 8 vs 7 ) | 0.007 | 0.510 | [-0.014 | 0.029 ] |
| ( 9 vs 8 ) | 0.011 | 0.375 | [-0.014 | 0.036 ] |
|  |  |  |  |  |
| Number of AP Exams - SAT Above 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | -0.003 | 0.687 | [-0.018 | 0.012 ] |
| ( 2 vs 1 ) | 0.020 | 0.014 | [0.004 | 0.036 ] |
| ( 3 vs 2 ) | 0.015 | 0.063 | [-0.001 | 0.030 ] |
| ( 4 vs 3 ) | 0.024 | 0.002 | [0.009 | 0.039 ] |
| ( 5 vs 4 ) | 0.001 | 0.885 | [-0.014 | 0.016 ] |
| ( 6 vs 5 ) | 0.011 | 0.161 | [-0.004 | 0.027 ] |
| ( 7 vs 6 ) | 0.000 | 0.963 | [-0.016 | 0.017 ] |
| ( 8 vs 7 ) | 0.000 | 0.988 | [-0.019 | 0.019 ] |
| ( 9 vs 8 ) | -0.004 | 0.640 | [-0.022 | 0.013 ] |
|  |  |  |  |  |
| Number of AP Exams Scoring 3 or Higher - SAT Above 95th Percentile | | | | |
| Contrasting Groups | Estimated Difference | P-Value | 95% Confidence Interval | |
| ( 1 vs 0 ) | -0.043 | 0.000 | [-0.057 | -0.029 ] |
| ( 2 vs 1 ) | 0.019 | 0.035 | [0.001 | 0.036 ] |
| ( 3 vs 2 ) | 0.020 | 0.033 | [0.002 | 0.038 ] |
| ( 4 vs 3 ) | 0.021 | 0.026 | [0.003 | 0.040 ] |
| ( 5 vs 4 ) | 0.026 | 0.007 | [0.007 | 0.045 ] |
| ( 6 vs 5 ) | 0.006 | 0.538 | [-0.014 | 0.026 ] |
| ( 7 vs 6 ) | 0.013 | 0.224 | [-0.008 | 0.034 ] |
| ( 8 vs 7 ) | 0.007 | 0.554 | [-0.016 | 0.031 ] |
| ( 9 vs 8 ) | 0.012 | 0.280 | [-0.010 | 0.033 ] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Appendix Table 9. Estimated Predicted Means in First Year GPA and Four-Year BA Attainment Across Number of APs Exams Taken and Number of AP Exams Scoring Three or Higher | | | | |
| Number of AP Exams | | | | |
| AP Exams Taken | Estimated FYGPA | Standard Error | 95% Confidence Interval | |
| 0 | 2.85 | 0.003 | 2.84 | 2.86 |
| 1 | 2.89 | 0.004 | 2.89 | 2.90 |
| 2 | 2.92 | 0.004 | 2.91 | 2.93 |
| 3 | 2.93 | 0.004 | 2.92 | 2.94 |
| 4 | 2.94 | 0.004 | 2.93 | 2.94 |
| 5 | 2.94 | 0.005 | 2.93 | 2.95 |
| 6 | 2.94 | 0.005 | 2.93 | 2.95 |
| 7 | 2.93 | 0.006 | 2.92 | 2.95 |
| 8 | 2.94 | 0.006 | 2.93 | 2.95 |
| 9 | 2.94 | 0.006 | 2.93 | 2.95 |
| Number of AP Exams Scoring 3 or Higher | | | | |
| AP Exams scoring 3 or higher | Estimated FYGPA | Standard Error | 95% Confidence Interval | |
| 0 | 2.81 | 0.003 | 2.81 | 2.82 |
| 1 | 2.92 | 0.004 | 2.92 | 2.93 |
| 2 | 2.96 | 0.004 | 2.96 | 2.97 |
| 3 | 2.99 | 0.005 | 2.98 | 3.00 |
| 4 | 3.02 | 0.005 | 3.01 | 3.03 |
| 5 | 3.03 | 0.005 | 3.02 | 3.04 |
| 6 | 3.04 | 0.006 | 3.03 | 3.05 |
| 7 | 3.05 | 0.007 | 3.04 | 3.06 |
| 8 | 3.06 | 0.008 | 3.04 | 3.08 |
| 9 | 3.09 | 0.007 | 3.07 | 3.10 |
| Number of AP Exams | | | | |
| AP Exams Taken | Estimated Probability of Graduation | Standard Error | 95% Confidence Interval | |
| 0 | 0.39 | 0.003 | 0.38 | 0.39 |
| 1 | 0.42 | 0.003 | 0.41 | 0.42 |
| 2 | 0.44 | 0.003 | 0.43 | 0.44 |
| 3 | 0.45 | 0.004 | 0.44 | 0.45 |
| 4 | 0.46 | 0.004 | 0.45 | 0.47 |
| 5 | 0.47 | 0.004 | 0.46 | 0.48 |
| 6 | 0.47 | 0.004 | 0.46 | 0.48 |
| 7 | 0.47 | 0.005 | 0.46 | 0.48 |
| 8 | 0.47 | 0.006 | 0.46 | 0.48 |
| 9 | 0.47 | 0.005 | 0.47 | 0.48 |
| Number of AP Exams Scoring 3 or Higher | | | | |
| Contrasting Groups | Estimated Probability of Graduation | Standard Error | 95% Confidence Interval | |
| 0 | 0.38 | 0.003 | 0.38 | 0.39 |
| 1 | 0.44 | 0.003 | 0.43 | 0.44 |
| 2 | 0.46 | 0.004 | 0.45 | 0.47 |
| 3 | 0.48 | 0.004 | 0.47 | 0.49 |
| 4 | 0.50 | 0.004 | 0.49 | 0.51 |
| 5 | 0.51 | 0.005 | 0.50 | 0.52 |
| 6 | 0.51 | 0.005 | 0.50 | 0.53 |
| 7 | 0.53 | 0.006 | 0.52 | 0.54 |
| 8 | 0.53 | 0.008 | 0.52 | 0.55 |
| 9 | 0.54 | 0.007 | 0.53 | 0.55 |
|  |  |  |  |  |

Appendix Table 10. Sample sizes of FYGPA sample across levels of AP exams taken and AP exams scoring 3 or higher

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| AP Exams Taken |  | AP Exams |  |  |  | AP Exams 3 or higher |  |
|  |  |  |  |  |  |  |  |
|  | N | % | Cum. % |  | N | % | Cum. % |
| 0 | 128,814 | 29.55 | 29.55 |  | 201,407 | 46.20 | 46.20 |
| 1 | 60,264 | 13.82 | 43.37 |  | 63,642 | 14.60 | 60.80 |
| 2 | 52,549 | 12.05 | 55.43 |  | 44,363 | 10.18 | 70.98 |
| 3 | 44,730 | 10.26 | 65.69 |  | 33,388 | 7.66 | 78.64 |
| 4 | 39,139 | 8.98 | 74.67 |  | 27,057 | 6.21 | 84.84 |
| 5 | 33,042 | 7.58 | 82.25 |  | 21,387 | 4.91 | 89.75 |
| 6 | 26,172 | 6.00 | 88.25 |  | 15,657 | 3.59 | 93.34 |
| 7 | 18,951 | 4.35 | 92.60 |  | 10,955 | 2.51 | 95.85 |
| 8 | 12,925 | 2.96 | 95.56 |  | 7,196 | 1.65 | 97.50 |
| 9+ | 19,349 | 4.44 | 100 |  | 10,883 | 2.50 | 100 |
|  |  |  |  |  |  |  |  |
| Total | 435,935 |  |  |  | 435,935 |  |  |

Appendix Table 11: Sample sizes of Graduation sample across levels of AP Exams taken and AP exams scoring 3 or higher

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| AP Exams Taken |  | AP Exams |  |  |  | AP Exams 3 or higher |  |
|  |  |  |  |  |  |  |  |
|  | N | % | Cum. % |  | N | % | Cum. % |
| 0 | 131,622 | 29.76 | 29.76 |  | 205,536 | 46.46 | 46.46 |
| 1 | 61,176 | 13.83 | 43.59 |  | 64,451 | 14.57 | 61.04 |
| 2 | 53,292 | 12.05 | 55.63 |  | 44,833 | 10.14 | 71.17 |
| 3 | 45,283 | 10.24 | 65.87 |  | 33,731 | 7.63 | 78.80 |
| 4 | 39,563 | 8.94 | 74.81 |  | 27,278 | 6.17 | 84.96 |
| 5 | 33,347 | 7.54 | 82.35 |  | 21,551 | 4.87 | 89.83 |
| 6 | 26,393 | 5.97 | 88.32 |  | 15,761 | 3.56 | 93.40 |
| 7 | 19,118 | 4.32 | 92.64 |  | 11,024 | 2.49 | 95.89 |
| 8 | 13,041 | 2.95 | 95.59 |  | 7,240 | 1.64 | 97.53 |
| 9+ | 19,511 | 4.41 | 100 |  | 10,941 | 2.47 | 100 |
|  |  |  |  |  |  |  |  |
| Total | 442,346 |  |  |  | 442,346 |  |  |