N way analysis of variance (ANOVA)/ two-way ANOVA

As illustrated in Table 10, Levene’s statistics was non-significant at p>0.05, thus the assumption of homogeneity of variance can be assumed.

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| **Levene's Test of Equality of Error Variancesa,b** | | | | | |
|  | | Levene Statistic | df1 | df2 | Sig. |
| writing score | Based on Mean | 1.318 | 5 | 194 | .258 |
| Based on Median | 1.392 | 5 | 194 | .229 |
| Based on Median and with adjusted df | 1.392 | 5 | 191.314 | .229 |
| Based on trimmed mean | 1.410 | 5 | 194 | .222 |
| Tests the null hypothesis that the error variance of the dependent variable is equal across groups. | | | | | |
| a. Dependent variable: writing score | | | | | |
| b. Design: Intercept + gender + prgtype + gender \* prgtype  The descriptive statistics showed that female with academic writing score highest(M=57.59, SD=7.12) whereas male with vocational had the lowest writing score(M=41.83, SD=8.00)   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Descriptive Statistics** | | | | | | Dependent Variable: writing score | | | | | | gender | prgtype | Mean | Std. Deviation | N | | male | general | 49.1429 | 10.36478 | 21 | | vocati | 41.8261 | 8.00370 | 23 | | academic | 54.6170 | 8.65662 | 47 | | Total | 50.1209 | 10.30516 | 91 | | female | general | 53.2500 | 8.20525 | 24 | | vocati | 50.9630 | 8.34119 | 27 | | academic | 57.5862 | 7.11567 | 58 | | Total | 54.9908 | 8.13372 | 109 | | Total | general | 51.3333 | 9.39778 | 45 | | vocati | 46.7600 | 9.31875 | 50 | | academic | 56.2571 | 7.94334 | 105 | | Total | 52.7750 | 9.47859 | 200 | | | | | | |

A two -way between-groups analysis of variance was conducted to explore the differences in writing score among gender and programmed type. The result showed that there were significant different between gender (F=18.478, p=0.001) and programmed type (F=23.973, p=0.001). However, the results showed that there were no significant interactions between gender and programmed type. Therefore, the null hypothesis that there is no difference in writing score among gender and income group in the population is rejected. It can be concluded that there is significant difference in writing score among gender and programmed type.

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| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: writing score | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 4630.361a | 5 | 926.072 | 13.561 | .000 |
| Intercept | 453562.215 | 1 | 453562.215 | 6641.580 | .000 |
| gender | 1261.853 | 1 | 1261.853 | 18.478 | .000 |
| prgtype | 3274.351 | 2 | 1637.175 | 23.973 | .000 |
| gender \* prgtype | 325.958 | 2 | 162.979 | 2.387 | .095 |
| Error | 13248.514 | 194 | 68.291 |  |  |
| Total | 574919.000 | 200 |  |  |  |
| Corrected Total | 17878.875 | 199 |  |  |  |
| a. R Squared = .259 (Adjusted R Squared = .240) | | | | | |