<div style="border:1px solid">

NMST547

Advanced Aspects of the R Environment

Sample Report

Arnošt Komárek

October 24, 2023

</div>

1 Sample table

Table 1: Analysis of **score in mathematics** by **family composition**.

Score in mathematics by Family composition					
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	54.05 (0.21)	9.72	54.87	47.35 – 61.86	2108
Mother and father	54.89 (0.24)	9.57	55.97	48.37 – 62.74	1600
Other	51.41 (0.43)	9.73	52.45	43.70 – 58.89	508
Difference in means: **3.48 (2.51, 4.45)**[†], P: **<0.001**[‡]					

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

2 Results

Results for math score are seen in Table 2. For science, see Table 3. If you are interested in social science, go to Table 4. Finally, reading score is analyzed in Table 5.

Table 2: Analysis of **Math Score**.

	Math score by **Gender**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.86 (0.20)	9.79	54.61	46.97 – 61.76	2311
Male	54.25 (0.30)	9.97	55.37	47.03 – 62.31	1139
Female	53.47 (0.28)	9.60	54.11	46.91 – 61.19	1172
Difference in means: 0.78	$(-0.01, 1.58)^\dagger$,		P: $0.054^\ddagger$		

† *95% confidence interval* $\qquad$ ‡ *Welch two-sample t-test*

	Math score by **Family composition**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	54.05 (0.21)	9.72	54.87	47.35 – 61.86	2108
Mother and father	54.89 (0.24)	9.57	55.97	48.37 – 62.74	1600
Other	51.41 (0.43)	9.73	52.45	43.70 – 58.89	508
Difference in means: **3.48**	**(2.51, 4.45)**†,		P: **$<$0.001**‡		

† *95% confidence interval* $\qquad$ ‡ *Welch two-sample t-test*

	Math score by **Math enrollment past 2 years**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	54.19 (0.20)	9.66	55.15	47.59 – 61.90	2249
Yes	54.72 (0.20)	9.42	55.80	48.36 – 62.20	2122
No	45.43 (0.83)	9.33	42.98	37.88 – 52.95	127
Difference in means: **9.29**	**(7.60, 10.97)**†,		P: **$<$0.001**‡		

† *95% confidence interval* $\qquad$ ‡ *Welch two-sample t-test*

	Math score by **Arrested**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	54.19 (0.20)	9.67	55.16	47.56 – 61.92	2246
Never	54.35 (0.21)	9.62	55.31	47.80 – 62.08	2187
Ever	48.27 (1.29)	9.89	48.87	39.11 – 56.74	59
Difference in means: **6.09**	**(3.48, 8.69)**†,		P: **$<$0.001**‡		

† *95% confidence interval* $\qquad$ ‡ *Welch two-sample t-test*

Table 3: Analysis of **Science Score**.

Science score by **Gender**

Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.51 (0.21)	9.82	54.53	46.00 – 61.74	2294
Male	54.82 (0.30)	9.93	56.22	47.72 – 63.36	1133
Female	52.23 (0.28)	9.54	53.15	44.86 – 59.95	1161
Difference in means: **2.59**	**(1.79, 3.39)**[†],		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Science score by **Family composition**

Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.88 (0.21)	9.63	54.89	46.59 – 61.90	2095
Mother and father	54.55 (0.24)	9.46	55.75	47.62 – 62.37	1593
Other	51.74 (0.44)	9.88	51.92	44.29 – 60.15	502
Difference in means: **2.81**	**(1.83, 3.79)**[†],		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Science score by **Math enrollment past 2 years**

Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.77 (0.21)	9.75	54.85	46.39 – 61.90	2233
Yes	54.14 (0.21)	9.66	55.39	47.02 – 62.17	2108
No	47.53 (0.81)	9.01	47.09	40.59 – 53.66	125
Difference in means: **6.61**	**(4.96, 8.26)**[†],		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Science score by **Arrested**

Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.78 (0.21)	9.75	54.87	46.40 – 61.90	2230
Never	53.93 (0.21)	9.64	54.95	46.72 – 61.91	2172
Ever	48.01 (1.57)	11.95	45.76	37.97 – 58.72	58
Difference in means: **5.92**	**(2.75, 9.09)**[†],		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Table 4: Analysis of **Social Science Score**.

	Social science score by **Gender**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.24 (0.20)	9.52	53.85	45.74 – 61.30	2275
Male	53.99 (0.29)	9.78	55.15	46.19 – 62.11	1125
Female	52.50 (0.27)	9.19	52.52	45.30 – 60.36	1150
Difference in means: **1.49**	**(0.71, 2.28)**[†],		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

	Social science score by **Family composition**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.51 (0.21)	9.47	54.40	46.03 – 61.48	2081
Mother and father	54.25 (0.24)	9.36	55.28	46.91 – 61.95	1584
Other	51.15 (0.42)	9.42	51.33	44.31 – 58.73	497
Difference in means: **3.10**	**(2.15, 4.05)**[†],		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

	Social science score by **Math enrollment past 2 years**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.52 (0.20)	9.43	54.29	46.06 – 61.44	2216
Yes	53.84 (0.20)	9.34	54.83	46.44 – 61.60	2094
No	48.10 (0.85)	9.37	46.54	41.46 – 54.92	122
Difference in means: **5.74**	**(4.02, 7.47)**[†]		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

	Social science score by **Arrested**				
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.52 (0.20)	9.44	54.27	46.06 – 61.45	2213
Never	53.68 (0.20)	9.39	54.53	46.20 – 61.55	2155
Ever	47.61 (1.24)	9.41	47.42	41.21 – 55.07	58
Difference in means: **6.07**	**(3.57, 8.58)**[†]		P: **<0.001**[‡]		

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Table 5: Analysis of **Reading Score**.

Reading score by **Gender**					
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.06 (0.20)	9.69	54.47	45.80 – 60.98	2306
Male	51.77 (0.30)	10.12	53.11	43.76 – 60.23	1137
Female	54.31 (0.27)	9.08	55.81	48.16 – 61.76	1169
Difference in means: **−2.54 (−3.33, −1.76)**[†], P: **<0.001**[‡]					

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Reading score by **Family composition**					
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.38 (0.21)	9.53	54.86	46.39 – 61.08	2107
Mother and father	53.85 (0.24)	9.56	55.54	47.03 – 61.82	1600
Other	51.92 (0.41)	9.30	53.40	45.16 – 59.16	507
Difference in means: **1.93 (0.99, 2.87)**[†], P: **<0.001**[‡]					

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Reading score by **Math enrollment past 2 years**					
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.30 (0.20)	9.62	54.78	46.31 – 61.11	2244
Yes	53.68 (0.21)	9.49	55.22	46.79 – 61.41	2117
No	46.90 (0.84)	9.49	47.06	39.45 – 53.14	127
Difference in means: **6.79 (5.07, 8.50)**[†], P: **<0.001**[‡]					

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*

Reading score by **Arrested**					
Group	Mean (S.E.)	Std. Dev.	Median	$Q_1 - Q_3$	N
All	53.31 (0.20)	9.61	54.81	46.32 – 61.14	2241
Never	53.50 (0.20)	9.53	54.94	46.46 – 61.22	2182
Ever	46.49 (1.31)	10.09	47.06	36.50 – 52.50	59
Difference in means: **7.01 (4.35, 9.66)**[†], P: **<0.001**[‡]					

[†] *95% confidence interval*   [‡] *Welch two-sample t-test*