

Biserial Correlation Analysis

Continuous variable: G3
Binary variable: sex
Group coding: F = 0, M = 1

Main result:

continuous_variable	binary_variable	group_0_label	group_1_label
G3	sex	F	M
n_total	n_group_0	n_group_1	proportion_group_0_q
649	383	266	0.5901387
proportion_group_1_p	mean_group_0	mean_group_1	sd_group_0
0.4098613	12.25326	11.40602	3.124147
sd_group_1	pooled_continuous_sd		
3.32069	3.230656		
mean_difference_group_1_minus_group_0			
-0.8472487			
point_biserial_correlation_rpb	point_biserial_ci95_lower		
-0.1290775	-0.2040135		
point_biserial_ci95_upper	t_value_for_rpb	df	p_value_two_tailed
-0.05263773	-3.310938	647	0.0009815287
normal_cut_point_z	normal_ordinate_y	biserial_correlation_rb	
0.2279017	0.3887153	-0.1631847	
biserial_correlation_rb_clipped_to_minus1_plus1			
-0.1631847			
biserial_from_rpb_check	decision_alpha_0_05		
-0.1633106	Significant association		

met

Point-biserial is Pearson r between a 0/1 variable and a continuous variable; biserial r applies the normal-cut correction for an artificially dichotomized v

Group descriptives:

binary_variable	group_code	group_label	n	mean
sex	0	F	383	12.25326
sex	1	M	266	11.40602
standard_deviation	minimum	maximum		
3.124147	0	19		
3.320690	0	19		

Assumption context:

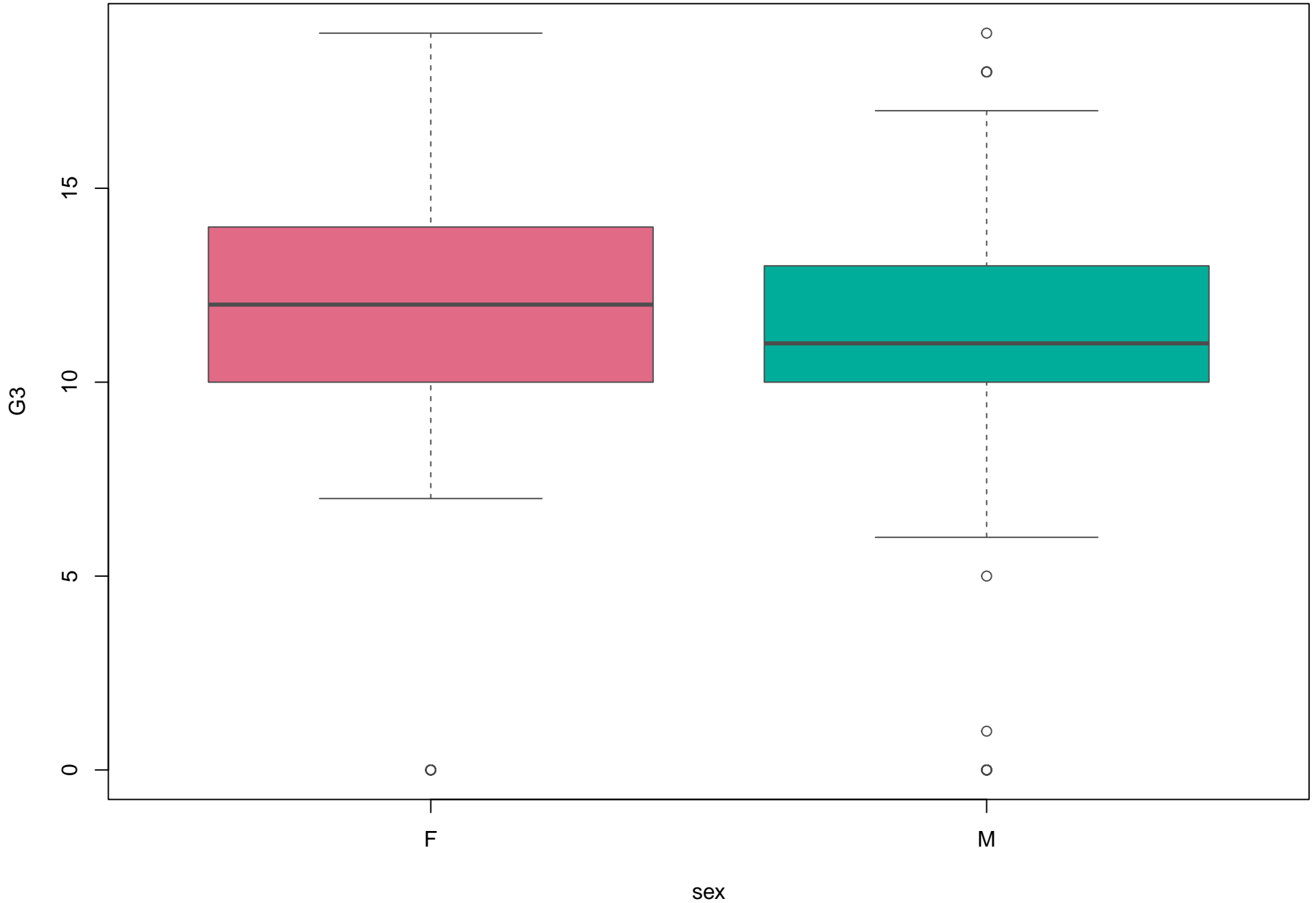
	check	statistic	p_value
Shapiro normality context: Group 0	0.9341671	5.699868e-12	
Shapiro normality context: Group 1	0.9128728	2.536043e-11	
Variance ratio context	1.1297794	NA	

note

Biserial correlation assumes the continuous variable is approximately normal within the underlying groups.
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A very large variance ratio weakens mean-difference based interpretation.

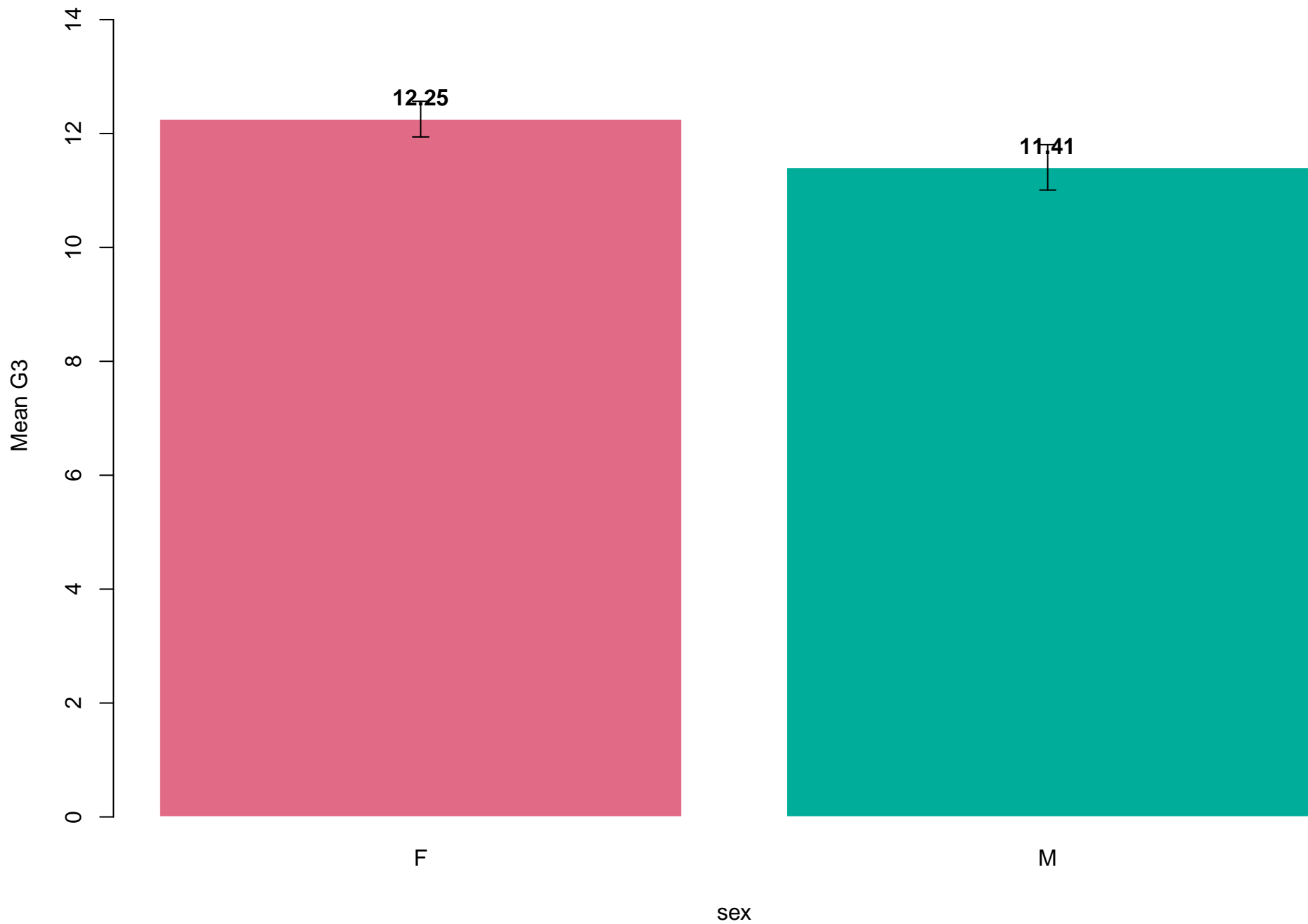
Biserial Correlation: Colorful Scores by Binary Group

Boxplots show whether the continuous score shifts between the two dichotomous categories.



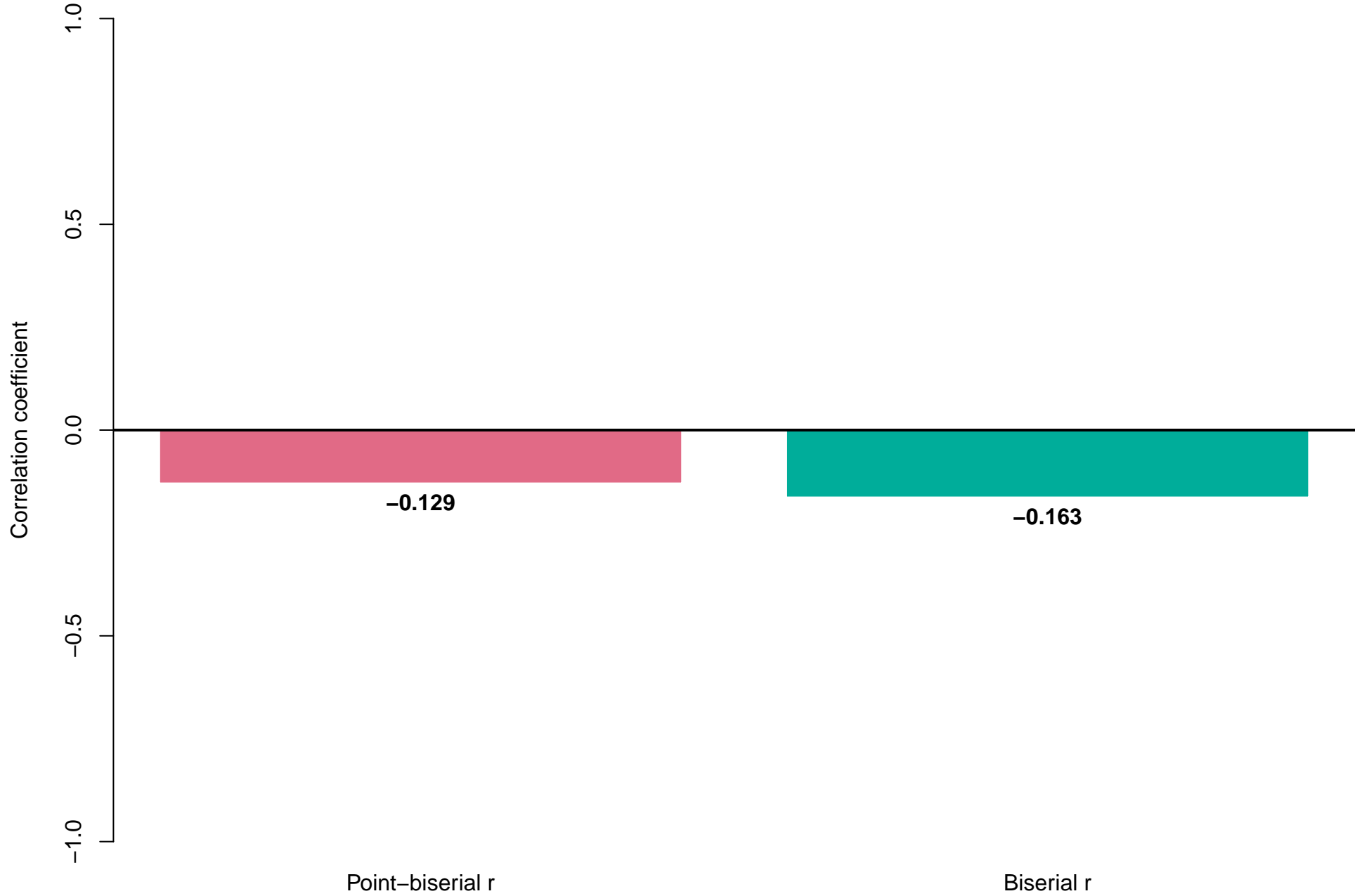
Biserial Correlation: Colorful Group Mean Difference

The point-biserial coefficient is driven by the mean gap and the group proportions.



Biserial Correlation: Colorful Coefficient Comparison

Biserial r applies a normal-cut correction to the observed binary split.



Biserial Correlation: Colorful Statistical Summary

Use this chart as the quick output summary for the article/report.

Biserial Correlation Report Card

Continuous variable: G3

Binary variable: sex (F = 0, M = 1)

N = 649 ; n0 = 383 ; n1 = 266

Point-biserial $r = -0.1291$

95% CI for point-biserial $r = [-0.2040, -0.0526]$

$t(647) = -3.3109$; $p = 0.000982$

Biserial $r = -0.1632$

Decision at alpha .05: Significant association