OSF-Material A

Confidence Intervals and P-Values for the Example Analyses

Table 1
95% Confidence Intervals and P-Values for the Regression Coefficients of the Polynomial Model

	Estimated regression model $Z = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2$					
	b_0	b_1	b_2	b_3	b_4	b_5
Figure 1a	[1.79, 1.8] (p=0)	[0, 0.01] (p=.34)	[-0.01, 0.01] (p=.85)	[-0.05, -0.04] (p=0)	[0.09, 0.1] (p=0)	[-0.06, -0.04] (p=0)
Figure 1b	[1.6, 1.62] (p=0)	[0.1, 0.12] (p=0)	[0.09, 0.11] (p=0)	[-0.06, -0.04] (p=0)	[0.09, 0.11] (p=0)	[-0.06, -0.04] (p=0)
Figure 1c	[1.59, 1.61] (p=0)	[0.09, 0.11] (p=0)	[0.1, 0.11] (p=0)	[-0.1, -0.09] (p=0)	[0.1, 0.11] (p=0)	[-0.11, -0.09] (p=0)
Figure 2a	[1.77, 1.8] (p=0)	[-0.19, -0.16] (p=0)	[0.16, 0.19] (p=0)	[-0.11, -0.1] (p=0)	[0.18, 0.21] (p=0)	[-0.1, -0.08] (p=0)
Figure 2b	[1.79, 1.81] (p=0)	[-0.01, 0.01] (p=.88)	[-0.01, 0] (p=.39)	[-0.1, -0.09] (p=0)	[0.1, 0.12] (p=0)	[-0.04, -0.02] (p=0)
Figure 2c	[15.09, 15.19] (p=0)	[0.05, 0.13] (p=0)	[1.51, 1.6] (p=0)	[-0.31, -0.25] (p=0)	[0.79, 0.9] (p=0)	[-0.6, -0.53] (p=0)
Figure 2d	[1.56, 1.64] (p=0)	[0.26, 0.32] (p=0)	[-0.04, 0.02] (p=.41)	[-0.1, -0.04] (p=0)	[-0.01, 0.08] (p=.09)	[-0.02, 0.04] (p=.49)
Figure 2e	[1.8, 1.81] (p=0)	[0, 0.01] (p=.74)	[0, 0.01] (p=.01)	[-0.01, 0] (p=.35)	[0.11, 0.12] (p=0)	[-0.12, -0.11] (p=0)
Figure 2f	[1, 1.01] (p=0)	[0, 0] (p=.66)	[0, 0] (p=.88)	[0.02, 0.03] (p=0)	[-0.05, -0.04] (p=0)	[0.02, 0.03] (p=0)

Table 2
95% Confidence Intervals and P-Values for the Coefficients of the First Principal Axis, LOC, and LOIC

	Position of first principal axis		Shape of surface along lines			
			LOC		LOIC	
	p_{10}	p_{11}	a_1	a_2	a_3	a_4
Figure 1a	[-0.07, 0.04] (p=.54)	[0.88, 1.03] (p=0)	[0, 0.01] (p=.56)	[-0.01, 0.01] (p=.96)	[-0.01, 0.01] (p=.53)	[-0.21, -0.18] (p=0)
Figure 1b	[-0.2, 0.04] (p=.19)	[0.89, 1.13] (p=0)	[0.2, 0.22] (p=0)	[-0.01, 0.01] (p=.98)	[0, 0.03] (p=.13)	[-0.22, -0.18] (p=0)
Figure 1c	[-0.03, 0.07] (p=.49)	[0.9, 1.08] (p=0)	[0.19, 0.21] (p=0)	[-0.1, -0.08] (p=0)	[-0.02, 0.01] (p=.52)	[-0.32, -0.29] (p=0)
Figure 2a	[0.79, 1.09] (p=0)	[1, 1.18] (p=0)	[-0.02, 0.02] (p=.87)	[-0.01, 0.01] (p=.95)	[-0.38, -0.32] (p=0)	[-0.42, -0.36] (p=0)
Figure 2b	[-0.09, 0.05] (p=.61)	[1.69, 1.97] (p=0)	[-0.01, 0.01] (p=.49)	[-0.03, -0.01] (p=0)	[-0.01, 0.02] (p=.53)	[-0.25, -0.22] (p=0)
Figure 2c	[0.79, 0.93] (p=0)	[0.68, 0.75] (p=0)	[1.61, 1.69] (p=0)	[-0.03, 0.04] (p=.74)	[-1.54, -1.39] (p=0)	[-1.79, -1.59] (p=0)
Figure 2d	[-21.45, 3.82] (p=.17)	[-0.62, 9.4] (p=.09)	[0.24, 0.31] (p=0)	[-0.06, 0.01] (p=.24)	[0.26, 0.35] (p=0)	[-0.18, -0.02] (p=.02)
Figure 2e	[0, 0.06] (p=.05)	[0.39, 0.44] (p=0)	[0, 0.02] (p=0)	[-0.01, 0] (p=.22)	[-0.02, 0] (p=.17)	[-0.24, -0.21] (p=0)
Figure 2f	(-)	(-)	[-0.01, 0] (p=.6)	[0, 0] (p=.7)	[-0.01, 0.01] (p=.88)	[0.08, 0.1] (p=0)

Note. The position of the first principal axis in the X-Y plane is given by $Y = p_{10} + p_{11}X$. The shape of the surface above the LOC is described by $Z = b_0 + a_1X + a_2X^2$, and the shape above the LOIC is $Z = b_0 + a_3X + a_4X^2$.
(-) For bowl-shaped surfaces, the first principal axis is of no interest when considering congruence effects.