

The Impact of National Culture in Operations and Supply Chain Agility

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Abstract

1 Preliminary Observations

1.1 Correlation Coefficients

Table 1: Correlation Coefficients: GLOBE Value Dimensions

	guav	gfuov	gpdiv	ginscolv	ghumv	gperv	gigrcolv	ggndv	gassv
guav	1	0.506	0.402	0.273	-0.275	0.055	0.206	-0.653	0.412
gfuov	0.506	1	-0.142	0.355	-0.015	0.370	0.443	-0.155	0.224
gpdiv	0.402	-0.142	1	-0.093	-0.346	-0.313	-0.063	-0.500	0.437
ginscolv	0.273	0.355	-0.093	1	-0.264	0.292	-0.078	-0.064	-0.085
ghumv	-0.275	-0.015	-0.346	-0.264	1	0.024	0.336	0.084	-0.214
gperv	0.055	0.370	-0.313	0.292	0.024	1	0.431	0.294	0.013
gigrcolv	0.206	0.443	-0.063	-0.078	0.336	0.431	1	0.278	-0.025
ggndv	-0.653	-0.155	-0.500	-0.064	0.084	0.294	0.278	1	-0.386
gassv	0.412	0.224	0.437	-0.085	-0.214	0.013	-0.025	-0.386	1

Table 2: Correlation Coefficients: Key Variables

	agility2	outcome2	strategy	competitive1	network4xcj
agility2	1	0.453	0.324	0.426	0.218
outcome2	0.453	1	0.300	0.330	0.108
strategy	0.324	0.300	1	0.221	0.103
competitive1	0.426	0.330	0.221	1	0.080
network4xcj	0.218	0.108	0.103	0.080	1

Table 3: Correlation Coefficients: Sub-dimensions of Key Variables

	agility2	outcome2	sensing2	proactive2	flexOutcome2	speedOutcome2
agility2	1	0.450	0.921	0.918	0.376	0.401
outcome2	0.450	1	0.388	0.439	0.865	0.862
sensing2	0.921	0.388	1	0.690	0.333	0.337
proactive2	0.918	0.439	0.690	1	0.358	0.400
flexOutcome2	0.376	0.865	0.333	0.358	1	0.490
speedOutcome2	0.401	0.862	0.337	0.400	0.490	1

Table 4: Correlation Coefficients on Level 1 (Firm Level) Variables

	agility2	outcome2	strategy	competitive1	network2x	firmsizecont
agility2	1	0.452	0.321	0.416	0.065	0.113
outcome2	0.452	1	0.293	0.320	0.022	0.036
strategy	0.321	0.293	1	0.216	0.049	-0.036
competitive1	0.416	0.320	0.216	1	-0.029	0.012
network2x	0.065	0.022	0.049	-0.029	1	0.135
firmsizecont	0.113	0.036	-0.036	0.012	0.135	1

Table 5: Correlation Coefficients on Level 2 (Country Level) Variables

	mfr2013	guav	gfuov	gpdiv	ginscolv	ghumv	gperv	gigrcolv	ggndv	gassv
mfr2013	1	0.444	-0.412	0.739	-0.095	-0.300	-0.241	-0.458	-0.617	0.685
guav	0.444	1	0.237	0.507	0.250	-0.327	-0.005	-0.098	-0.744	0.512
gfuov	-0.412	0.237	1	-0.395	0.336	0.039	0.406	0.417	0.170	-0.034
gpdiv	0.739	0.507	-0.395	1	-0.170	-0.398	-0.400	-0.327	-0.635	0.616
ginscolv	-0.095	0.250	0.336	-0.170	1	-0.252	0.433	-0.043	0.015	-0.108
ghumv	-0.300	-0.327	0.039	-0.398	-0.252	1	0.117	0.522	0.257	-0.380
gperv	-0.241	-0.005	0.406	-0.400	0.433	0.117	1	0.448	0.362	-0.225
gigrcolv	-0.458	-0.098	0.417	-0.327	-0.043	0.522	0.448	1	0.523	-0.389
ggndv	-0.617	-0.744	0.170	-0.635	0.015	0.257	0.362	0.523	1	-0.577
gassv	0.685	0.512	-0.034	0.616	-0.108	-0.380	-0.225	-0.389	-0.577	1

2 Models

2.1 Models: Agility and National Culture

$$Agility_{ij} = \beta_0 + \beta_1 \cdot Network + \beta_2 \cdot Competitive\ Pressure + \beta_3 \cdot Competitive\ Pressure \times Network + \delta_1 \cdot Firm\ Size + \delta_2 \cdot Strategic\ Orientation + \varepsilon_{ij}$$

$$\begin{aligned} \beta_0 &= \gamma_{00} + \gamma_{01} \cdot Mfr2013 + \gamma_{02} \cdot Culture + u_0 \\ \beta_1 &= \gamma_{10} + \gamma_{11} \cdot Culture + u_1 \\ \beta_2 &= \gamma_{20} + \gamma_{21} \cdot Culture + u_2 \\ \beta_3 &= \gamma_{30} + \gamma_{31} \cdot Culture + u_3 \end{aligned}$$

2.2 Models: Agility Effectiveness and National Culture

$$Outcome_{ij} = \beta_0 + \beta_1 \cdot Network + \beta_2 \cdot Agility + \beta_3 \cdot Agility \times Network + \delta_1 \cdot Firm\ Size + \delta_2 \cdot Strategic\ Orientation + \varepsilon_{ij}$$

$$\begin{aligned} \beta_0 &= \gamma_{00} + \gamma_{01} \cdot Mfr2013 + \gamma_{02} \cdot Culture + u_0 \\ \beta_1 &= \gamma_{10} + \gamma_{11} \cdot Culture + u_1 \\ \beta_2 &= \gamma_{20} + \gamma_{21} \cdot Culture + u_2 \\ \beta_3 &= \gamma_{30} + \gamma_{31} \cdot Culture + u_3 \end{aligned}$$

3 Results

3.1 Multilevel Models

3.1.1 Null Models

	Agility Practices2	Agility Outcome2
b_Intercept	-0.10 [-0.31; 0.10]	-0.08 [-0.23; 0.07]
sd_countryx_Intercept	0.45* [0.32; 0.66]	0.29* [0.19; 0.43]
sigma	0.88* [0.84; 0.93]	0.95* [0.90; 0.99]

* Null hypothesis value outside 95% credible interval.

Table 6: Null Models

3.1.2 Agility Models

	UAI	FUO	PDI	InsCol	HUM	PER	IgrCol	GND	ASS
b_Intercept	-0.19*	-0.15	-0.14	-0.16	-0.10	-0.15	-0.15	-0.15	-0.16
	[-0.33; -0.04]	[-0.36; 0.05]	[-0.35; 0.05]	[-0.37; 0.04]	[-0.27; 0.06]	[-0.36; 0.06]	[-0.36; 0.06]	[-0.34; 0.03]	[-0.38; 0.05]
b_mfr2013.z	-0.08	-0.00	-0.09	-0.02	-0.07	-0.00	-0.00	-0.06	-0.01
	[-0.21; 0.05]	[-0.19; 0.20]	[-0.29; 0.10]	[-0.22; 0.17]	[-0.23; 0.09]	[-0.20; 0.20]	[-0.22; 0.21]	[-0.24; 0.12]	[-0.27; 0.23]
b_firmsize.adj.cj	0.20*	0.21*	0.21*	0.21*	0.21*	0.21*	0.21*	0.20*	0.21*
	[0.11; 0.29]	[0.11; 0.30]	[0.11; 0.30]	[0.11; 0.30]	[0.11; 0.30]	[0.11; 0.30]	[0.11; 0.30]	[0.11; 0.30]	[0.12; 0.31]
b_strategycj	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*
	[0.10; 0.23]	[0.10; 0.22]	[0.09; 0.23]	[0.10; 0.22]	[0.10; 0.23]	[0.10; 0.23]	[0.10; 0.22]	[0.10; 0.22]	[0.09; 0.22]
b_competitive1cj	0.26*	0.26*	0.25*	0.25*	0.25*	0.25*	0.26*	0.25*	0.26*
	[0.16; 0.35]	[0.16; 0.34]	[0.15; 0.34]	[0.17; 0.32]	[0.15; 0.34]	[0.15; 0.33]	[0.16; 0.34]	[0.16; 0.34]	[0.15; 0.35]
b_network2xcj	0.19	0.18	0.17	0.17	0.17	0.19	0.18	0.17	0.15
	[-0.04; 0.41]	[-0.03; 0.38]	[-0.05; 0.37]	[-0.04; 0.37]	[-0.05; 0.37]	[-0.02; 0.40]	[-0.04; 0.38]	[-0.04; 0.38]	[-0.06; 0.35]
b_cul	0.28*	0.06	0.19	0.06	-0.27*	0.04	0.03	-0.17	0.01
	[0.12; 0.44]	[-0.15; 0.27]	[-0.02; 0.41]	[-0.15; 0.26]	[-0.47; -0.07]	[-0.18; 0.26]	[-0.20; 0.26]	[-0.36; 0.03]	[-0.26; 0.29]
b_competitive1cj:cul	-0.02	-0.00	0.02	-0.10*	0.04	-0.03	0.02	-0.02	-0.02
	[-0.12; 0.08]	[-0.09; 0.08]	[-0.06; 0.11]	[-0.17; -0.03]	[-0.06; 0.14]	[-0.11; 0.05]	[-0.06; 0.11]	[-0.10; 0.06]	[-0.10; 0.06]
b_network2xcj:cul	-0.05	-0.08	0.10	-0.10	-0.11	0.06	-0.02	-0.02	0.09
	[-0.30; 0.19]	[-0.29; 0.13]	[-0.09; 0.28]	[-0.30; 0.10]	[-0.32; 0.12]	[-0.13; 0.25]	[-0.24; 0.20]	[-0.21; 0.18]	[-0.09; 0.26]
b_competitive1cj:network2xcj:cul	0.07	-0.09	0.15	-0.23	-0.06	-0.29*	-0.17	-0.19	0.15
	[-0.29; 0.43]	[-0.40; 0.24]	[-0.15; 0.45]	[-0.50; 0.06]	[-0.42; 0.31]	[-0.50; -0.06]	[-0.49; 0.17]	[-0.47; 0.11]	[-0.16; 0.47]
sd_countryx_Intercept	0.29*	0.43*	0.39*	0.42*	0.33*	0.43*	0.43*	0.38*	0.43*
	[0.18; 0.47]	[0.28; 0.66]	[0.24; 0.60]	[0.27; 0.65]	[0.21; 0.51]	[0.28; 0.67]	[0.28; 0.67]	[0.24; 0.59]	[0.28; 0.67]
sd_countryx_network4xcj	0.15*	0.14*	0.13*	0.14*	0.14*	0.14*	0.15*	0.14*	0.13*
	[0.07; 0.26]	[0.06; 0.24]	[0.05; 0.23]	[0.06; 0.23]	[0.05; 0.24]	[0.06; 0.25]	[0.06; 0.26]	[0.06; 0.25]	[0.05; 0.23]
sd_countryx_competitive1cj	0.09*	0.08*	0.09*	0.05*	0.09*	0.08*	0.09*	0.08*	0.10*
	[0.00; 0.21]	[0.00; 0.21]	[0.01; 0.23]	[0.00; 0.14]	[0.01; 0.21]	[0.00; 0.22]	[0.00; 0.21]	[0.00; 0.22]	[0.01; 0.24]
sd_countryx_competitive1cj:network2xcj	0.56*	0.55*	0.53*	0.48*	0.58*	0.33*	0.52*	0.50*	0.56*
	[0.30; 0.96]	[0.29; 0.93]	[0.27; 0.89]	[0.22; 0.82]	[0.32; 0.95]	[0.04; 0.71]	[0.28; 0.88]	[0.24; 0.86]	[0.30; 0.94]
sigma	0.77*	0.77*	0.77*	0.76*	0.77*	0.77*	0.77*	0.77*	0.77*
	[0.72; 0.81]	[0.72; 0.81]	[0.72; 0.82]	[0.72; 0.81]	[0.72; 0.81]	[0.73; 0.82]	[0.72; 0.82]	[0.73; 0.81]	[0.72; 0.81]

* Null hypothesis value outside 95% credible interval.

Table 7: Agility2 Models (Z) - Three-way Interaction with 2 Level Network

	UAI	FUO	PDI	InsCol	HUM	PER	IgrCol	GND	ASS
b_Intercept	-0.19*	-0.15	-0.14	-0.16	-0.10	-0.15	-0.15	-0.15	-0.16
	[-0.31; -0.07]	[-0.33; 0.02]	[-0.31; 0.01]	[-0.33; 0.01]	[-0.24; 0.03]	[-0.32; 0.02]	[-0.32; 0.03]	[-0.30; 0.00]	[-0.33; 0.01]
b_mfr2013.z	-0.08	-0.00	-0.09	-0.02	-0.07	-0.00	-0.00	-0.06	-0.01
	[-0.19; 0.03]	[-0.16; 0.16]	[-0.25; 0.07]	[-0.19; 0.14]	[-0.20; 0.06]	[-0.16; 0.17]	[-0.17; 0.17]	[-0.20; 0.09]	[-0.22; 0.19]
b_firmsize.adj.cj	0.20*	0.21*	0.21*	0.21*	0.21*	0.21*	0.21*	0.20*	0.21*
	[0.12; 0.28]	[0.13; 0.28]	[0.12; 0.29]	[0.13; 0.29]	[0.13; 0.29]	[0.13; 0.28]	[0.13; 0.29]	[0.12; 0.28]	[0.13; 0.29]
b_strategycj	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*	0.16*
	[0.11; 0.22]	[0.11; 0.22]	[0.11; 0.22]	[0.11; 0.21]	[0.11; 0.22]	[0.11; 0.22]	[0.11; 0.21]	[0.11; 0.21]	[0.11; 0.21]
b_competitive1cj	0.26*	0.26*	0.25*	0.25*	0.25*	0.25*	0.26*	0.25*	0.26*
	[0.18; 0.33]	[0.18; 0.33]	[0.17; 0.32]	[0.19; 0.31]	[0.17; 0.32]	[0.17; 0.32]	[0.18; 0.33]	[0.17; 0.32]	[0.18; 0.33]
b_network2xcj	0.19*	0.18*	0.17	0.17	0.17	0.19*	0.18	0.17	0.15
	[0.00; 0.38]	[0.01; 0.35]	[-0.01; 0.33]	[-0.00; 0.34]	[-0.01; 0.34]	[0.01; 0.36]	[-0.00; 0.35]	[-0.01; 0.35]	[-0.02; 0.32]
b_cul	0.28*	0.06	0.19*	0.06	-0.27*	0.04	0.03	-0.17*	0.01
	[0.14; 0.41]	[-0.12; 0.23]	[0.01; 0.37]	[-0.11; 0.22]	[-0.44; -0.11]	[-0.14; 0.22]	[-0.17; 0.22]	[-0.33; -0.01]	[-0.21; 0.24]
b_competitive1cj:cul	-0.02	-0.00	0.02	-0.10*	0.04	-0.03	0.02	-0.02	-0.02
	[-0.10; 0.06]	[-0.08; 0.07]	[-0.05; 0.09]	[-0.16; -0.04]	[-0.05; 0.13]	[-0.10; 0.04]	[-0.05; 0.10]	[-0.09; 0.05]	[-0.08; 0.05]
b_network2xcj:cul	-0.05	-0.08	0.10	-0.10	-0.11	0.06	-0.02	-0.02	0.09
	[-0.26; 0.15]	[-0.25; 0.09]	[-0.06; 0.25]	[-0.26; 0.06]	[-0.29; 0.08]	[-0.10; 0.22]	[-0.20; 0.16]	[-0.17; 0.15]	[-0.06; 0.23]
b_competitive1cj:network2xcj:cul	0.07	-0.09	0.15	-0.23	-0.06	-0.29*	-0.17	-0.19	0.15
	[-0.23; 0.37]	[-0.35; 0.17]	[-0.09; 0.40]	[-0.45; 0.01]	[-0.36; 0.24]	[-0.47; -0.10]	[-0.43; 0.10]	[-0.42; 0.05]	[-0.11; 0.41]
sd_countryx_Intercept	0.29*	0.43*	0.39*	0.42*	0.33*	0.43*	0.43*	0.38*	0.43*
	[0.19; 0.43]	[0.30; 0.61]	[0.26; 0.55]	[0.29; 0.60]	[0.22; 0.47]	[0.30; 0.61]	[0.30; 0.62]	[0.26; 0.54]	[0.30; 0.61]
sd_countryx_network4xcj	0.15*	0.14*	0.13*	0.14*	0.14*	0.14*	0.15*	0.14*	0.13*
	[0.08; 0.23]	[0.07; 0.22]	[0.06; 0.22]	[0.07; 0.21]	[0.06; 0.22]	[0.07; 0.23]	[0.07; 0.23]	[0.07; 0.23]	[0.07; 0.21]
sd_countryx_competitive1cj	0.09*	0.08*	0.09*	0.05*	0.09*	0.08*	0.09*	0.08*	0.10*
	[0.01; 0.19]	[0.01; 0.19]	[0.01; 0.20]	[0.00; 0.12]	[0.01; 0.19]	[0.01; 0.19]	[0.01; 0.19]	[0.01; 0.19]	[0.01; 0.21]
sd_countryx_competitive1cj:network2xcj	0.56*	0.55*	0.53*	0.48*	0.58*	0.33*	0.52*	0.50*	0.56*
	[0.33; 0.87]	[0.33; 0.84]	[0.30; 0.81]	[0.25; 0.76]	[0.36; 0.87]	[0.07; 0.63]	[0.31; 0.80]	[0.28; 0.79]	[0.34; 0.85]
sigma	0.77*	0.77*	0.77*	0.76*	0.77*	0.77*	0.77*	0.77*	0.77*
	[0.73; 0.80]	[0.73; 0.81]	[0.73; 0.81]	[0.73; 0.80]	[0.73; 0.81]	[0.73; 0.81]	[0.73; 0.81]	[0.73; 0.81]	[0.73; 0.80]

* Null hypothesis value outside 90% credible interval.

Table 8: Agility2 Models (Z) alpha = .10 - Threeway Interaction with 2 Level Network

3.1.3 Outcome Models

	UAI	FUO	PDI	InsCol	HUM	PER	IgrCol	GND	ASS
b_Intercept	-0.09 [-0.22; 0.04]	-0.09 [-0.21; 0.03]	-0.09 [-0.23; 0.04]	-0.09 [-0.23; 0.03]	-0.08 [-0.20; 0.05]	-0.09 [-0.22; 0.05]	-0.08 [-0.20; 0.05]	-0.09 [-0.22; 0.04]	-0.09 [-0.19; 0.02]
b_mfr2013.z	-0.04 [-0.15; 0.08]	-0.05 [-0.16; 0.06]	-0.05 [-0.18; 0.08]	-0.03 [-0.14; 0.09]	-0.05 [-0.17; 0.06]	-0.03 [-0.15; 0.08]	-0.06 [-0.18; 0.06]	-0.04 [-0.16; 0.08]	0.09 [-0.03; 0.20]
b_firmsize.adj.cj	0.00 [-0.11; 0.12]	0.01 [-0.11; 0.12]	0.00 [-0.11; 0.12]	0.02 [-0.10; 0.13]	0.01 [-0.10; 0.12]	0.01 [-0.10; 0.12]	0.01 [-0.10; 0.12]	0.00 [-0.11; 0.11]	0.01 [-0.10; 0.12]
b_strategycj	0.18* [0.10; 0.25]	0.17* [0.09; 0.25]	0.17* [0.10; 0.25]	0.17* [0.10; 0.25]	0.18* [0.10; 0.25]	0.17* [0.10; 0.25]	0.18* [0.10; 0.25]	0.18* [0.10; 0.25]	0.17* [0.10; 0.25]
b_agility2cj	0.27* [0.13; 0.41]	0.27* [0.13; 0.40]	0.27* [0.12; 0.40]	0.24* [0.13; 0.36]	0.28* [0.13; 0.42]	0.27* [0.13; 0.41]	0.27* [0.13; 0.41]	0.27* [0.12; 0.41]	0.27* [0.12; 0.41]
b_network2xcj	0.06 [-0.13; 0.25]	0.04 [-0.14; 0.23]	0.07 [-0.11; 0.26]	0.04 [-0.14; 0.23]	0.05 [-0.13; 0.23]	0.05 [-0.14; 0.24]	0.03 [-0.15; 0.22]	0.05 [-0.14; 0.24]	0.06 [-0.12; 0.25]
b_cul	0.03 [-0.12; 0.17]	-0.10 [-0.23; 0.03]	0.02 [-0.14; 0.18]	0.05 [-0.08; 0.18]	-0.10 [-0.25; 0.06]	-0.01 [-0.14; 0.13]	-0.09 [-0.23; 0.05]	-0.01 [-0.15; 0.13]	-0.20* [-0.33; -0.07]
b_agility2cj:cul	0.06 [-0.11; 0.22]	0.02 [-0.13; 0.17]	0.04 [-0.10; 0.19]	-0.18* [-0.30; -0.07]	-0.02 [-0.19; 0.16]	-0.09 [-0.22; 0.04]	0.04 [-0.11; 0.20]	-0.05 [-0.19; 0.09]	0.04 [-0.10; 0.18]
b_network2xcj:cul	-0.07 [-0.26; 0.13]	0.10 [-0.07; 0.28]	-0.12 [-0.29; 0.03]	-0.05 [-0.22; 0.12]	0.17 [-0.03; 0.37]	0.00 [-0.16; 0.15]	0.06 [-0.13; 0.26]	0.04 [-0.12; 0.21]	-0.09 [-0.25; 0.06]
b_agility2cj:network2xcj:cul	0.15 [-0.16; 0.44]	-0.06 [-0.34; 0.20]	0.12 [-0.14; 0.38]	-0.30* [-0.52; -0.08]	-0.09 [-0.39; 0.24]	-0.22* [-0.41; -0.02]	-0.09 [-0.36; 0.20]	-0.23 [-0.45; 0.03]	0.17 [-0.06; 0.39]
sd_countryx_Intercept	0.21* [0.10; 0.37]	0.20* [0.09; 0.35]	0.23* [0.11; 0.39]	0.22* [0.11; 0.38]	0.21* [0.10; 0.36]	0.23* [0.12; 0.38]	0.21* [0.11; 0.36]	0.22* [0.10; 0.37]	0.13* [0.01; 0.28]
sd_countryx_network4xcj	0.05* [0.00; 0.14]	0.05* [0.00; 0.14]	0.04* [0.00; 0.13]	0.04* [0.00; 0.13]	0.04* [0.00; 0.12]	0.05* [0.00; 0.14]	0.05* [0.00; 0.14]	0.05* [0.00; 0.14]	0.05* [0.00; 0.14]
sd_countryx_agility2cj	0.21* [0.06; 0.39]	0.23* [0.10; 0.40]	0.23* [0.09; 0.40]	0.12* [0.01; 0.27]	0.23* [0.09; 0.40]	0.18* [0.03; 0.37]	0.24* [0.11; 0.40]	0.21* [0.06; 0.38]	0.24* [0.11; 0.41]
sd_countryx_agility2cj:network2xcj	0.30* [0.04; 0.62]	0.36* [0.11; 0.68]	0.34* [0.07; 0.66]	0.18* [0.01; 0.48]	0.35* [0.10; 0.67]	0.19* [0.01; 0.51]	0.32* [0.06; 0.64]	0.23* [0.02; 0.53]	0.32* [0.05; 0.65]
sigma	0.76* [0.68; 0.84]	0.75* [0.68; 0.83]	0.75* [0.68; 0.83]	0.76* [0.68; 0.84]	0.75* [0.67; 0.83]	0.76* [0.68; 0.84]	0.75* [0.67; 0.84]	0.76* [0.68; 0.84]	0.75* [0.67; 0.83]

* Null hypothesis value outside 95% credible interval.

Table 9: Outcome2 Models (T) - Three-way with 2 Level Network

	UAI	FUO	PDI	InsCol	HUM	PER	IgrCol	GND	ASS
b_Intercept	-0.09 [-0.20; 0.01]	-0.09 [-0.19; 0.01]	-0.09 [-0.20; 0.02]	-0.09 [-0.20; 0.01]	-0.08 [-0.18; 0.03]	-0.09 [-0.19; 0.03]	-0.08 [-0.18; 0.03]	-0.09 [-0.20; 0.02]	-0.09* [-0.17; -0.00]
b_mfr2013.z	-0.04 [-0.13; 0.06]	-0.05 [-0.14; 0.04]	-0.05 [-0.16; 0.06]	-0.03 [-0.12; 0.06]	-0.05 [-0.15; 0.04]	-0.03 [-0.13; 0.06]	-0.06 [-0.16; 0.04]	-0.04 [-0.14; 0.06]	0.09 [-0.01; 0.19]
b_firmsize.adj.cj	0.00 [-0.09; 0.10]	0.01 [-0.09; 0.10]	0.00 [-0.09; 0.10]	0.02 [-0.08; 0.11]	0.01 [-0.09; 0.10]	0.01 [-0.09; 0.10]	0.01 [-0.08; 0.10]	0.00 [-0.09; 0.09]	0.01 [-0.08; 0.10]
b_strategycj	0.18* [0.11; 0.24]	0.17* [0.11; 0.24]	0.17* [0.11; 0.24]	0.17* [0.11; 0.24]	0.18* [0.11; 0.24]	0.17* [0.11; 0.24]	0.18* [0.11; 0.24]	0.18* [0.11; 0.24]	0.17* [0.11; 0.24]
b_agility2cj	0.27* [0.15; 0.38]	0.27* [0.15; 0.38]	0.27* [0.15; 0.38]	0.24* [0.15; 0.33]	0.28* [0.16; 0.39]	0.27* [0.16; 0.38]	0.27* [0.15; 0.39]	0.27* [0.15; 0.38]	0.27* [0.14; 0.39]
b_network2xcj	0.06 [-0.10; 0.22]	0.04 [-0.12; 0.20]	0.07 [-0.08; 0.23]	0.04 [-0.11; 0.19]	0.05 [-0.10; 0.20]	0.05 [-0.11; 0.20]	0.03 [-0.12; 0.19]	0.05 [-0.11; 0.21]	0.06 [-0.09; 0.22]
b_cul	0.03 [-0.09; 0.15]	-0.10 [-0.20; 0.00]	0.02 [-0.11; 0.15]	0.05 [-0.06; 0.15]	-0.10 [-0.22; 0.03]	-0.01 [-0.12; 0.11]	-0.09 [-0.20; 0.03]	-0.01 [-0.12; 0.10]	-0.20* [-0.31; -0.09]
b_agility2cj:cul	0.06 [-0.08; 0.20]	0.02 [-0.10; 0.14]	0.04 [-0.08; 0.17]	-0.18* [-0.28; -0.09]	-0.02 [-0.16; 0.13]	-0.09 [-0.20; 0.02]	0.04 [-0.09; 0.17]	-0.05 [-0.17; 0.06]	0.04 [-0.07; 0.16]
b_network2xcj:cul	-0.07 [-0.23; 0.10]	0.10 [-0.04; 0.25]	-0.12 [-0.26; 0.01]	-0.05 [-0.19; 0.09]	0.17 [-0.00; 0.33]	0.00 [-0.13; 0.13]	0.06 [-0.09; 0.23]	0.04 [-0.10; 0.18]	-0.09 [-0.22; 0.04]
b_agility2cj:network2xcj:cul	0.15 [-0.11; 0.39]	-0.06 [-0.29; 0.16]	0.12 [-0.09; 0.34]	-0.30* [-0.49; -0.12]	-0.09 [-0.34; 0.17]	-0.22* [-0.38; -0.05]	-0.09 [-0.32; 0.15]	-0.23* [-0.41; -0.02]	0.17 [-0.02; 0.35]
sd_countryx_Intercept	0.21* [0.11; 0.33]	0.20* [0.11; 0.32]	0.23* [0.13; 0.36]	0.22* [0.12; 0.34]	0.21* [0.11; 0.33]	0.23* [0.13; 0.35]	0.21* [0.12; 0.33]	0.22* [0.12; 0.34]	0.13* [0.02; 0.25]
sd_countryx_network4xcj	0.05* [0.00; 0.12]	0.05* [0.00; 0.12]	0.04* [0.00; 0.11]	0.04* [0.00; 0.11]	0.04* [0.00; 0.10]	0.05* [0.00; 0.12]	0.05* [0.00; 0.13]	0.05* [0.00; 0.12]	0.05* [0.00; 0.13]
sd_countryx_agility2cj	0.21* [0.09; 0.35]	0.23* [0.12; 0.36]	0.23* [0.11; 0.36]	0.12* [0.02; 0.24]	0.23* [0.12; 0.37]	0.18* [0.05; 0.33]	0.24* [0.13; 0.37]	0.21* [0.09; 0.35]	0.24* [0.13; 0.38]
sd_countryx_agility2cj:network2xcj	0.30* [0.07; 0.56]	0.36* [0.15; 0.62]	0.34* [0.12; 0.59]	0.18* [0.02; 0.42]	0.35* [0.13; 0.61]	0.19* [0.02; 0.44]	0.32* [0.09; 0.57]	0.23* [0.03; 0.47]	0.32* [0.09; 0.58]
sigma	0.76* [0.69; 0.82]	0.75* [0.69; 0.82]	0.75* [0.69; 0.82]	0.76* [0.69; 0.83]	0.75* [0.68; 0.82]	0.76* [0.69; 0.83]	0.75* [0.68; 0.82]	0.76* [0.69; 0.82]	0.75* [0.68; 0.82]

* Null hypothesis value outside 90% credible interval.

Table 10: Outcome2 Models (T) alpha = .10 - Three-way with 2 Level Network

4 Model Fit and Diagnostic

	model	agility2.z	outcome2.z	agility2.t	outcome2.t
1	control	1585.67	1726.85	1584.51	1705.32
2	guav	1544.14	1486.82	1541.81	1467.70
3	gfuov	1549.00	1491.67	1546.36	1471.14
4	gpdiv	1542.58	1488.33	1540.60	1468.92
5	ginscolv	1532.22	1470.75	1530.47	1456.39
6	ghumv	1546.53	1485.82	1545.67	1463.98
7	gperv	1530.33	1484.28	1527.20	1465.31
8	gigrcolv	1543.71	1490.00	1539.74	1471.75
9	ggndv	1542.96	1486.16	1540.48	1466.73
10	gassv	1545.43	1486.93	1541.90	1463.44

Table 11: looic Score

	model	agility2.z.3way	outcome2.t.3way
1	control	1585.92	1705.07
2	guav	1517.98	1463.93
3	gfuov	1521.52	1459.54
4	gpdiv	1520.13	1460.41
5	ginscolv	1509.81	1453.75
6	ghumv	1516.99	1458.90
7	gperv	1522.89	1460.94
8	gigrcolv	1521.47	1460.39
9	ggndv	1522.53	1462.25
10	gassv	1519.41	1454.88

Table 12: looic Score - Three-way Models

	model	agility2.z	outcome2.z	agility2.t	outcome2.t
1	control	0.28	0.11	0.28	0.10
2	guaiv	0.34	0.23	0.33	0.23
3	gfuv	0.33	0.23	0.33	0.22
4	gpdiv	0.34	0.23	0.34	0.23
5	ginscolv	0.35	0.24	0.34	0.24
6	ghumv	0.33	0.23	0.33	0.23
7	gperv	0.35	0.23	0.35	0.23
8	gigrcolv	0.34	0.23	0.34	0.22
9	ggndv	0.34	0.24	0.34	0.23
10	gassv	0.34	0.23	0.34	0.23

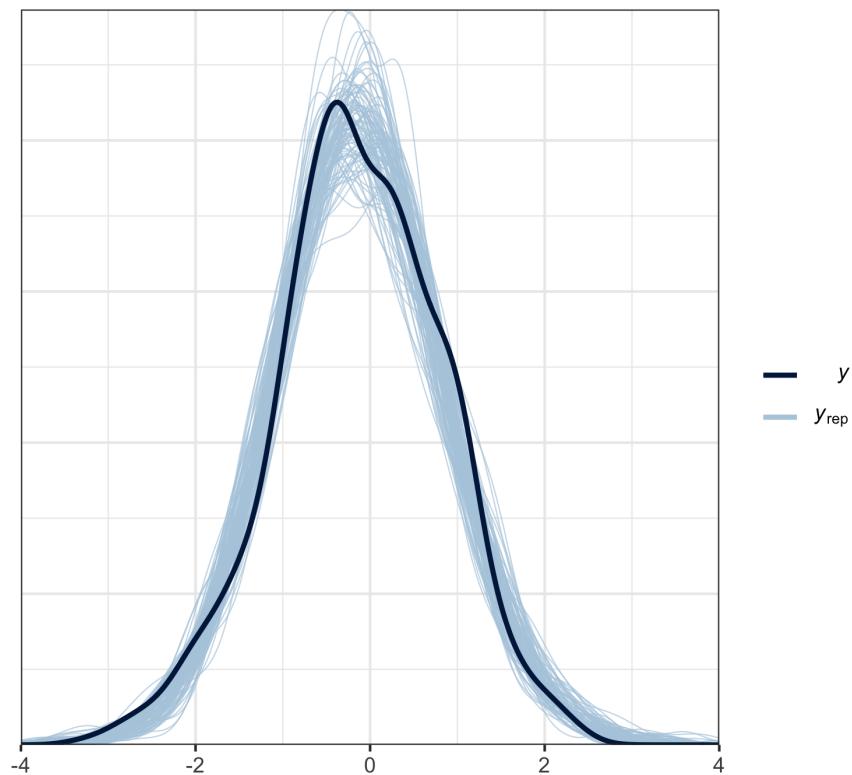
Table 13: Bayes R2 Score

	model	agility2.z	outcome2.t
1	control	0.28	0.10
2	guaiv	0.37	0.25
3	gfuv	0.37	0.25
4	gpdiv	0.37	0.25
5	ginscolv	0.38	0.25
6	ghumv	0.37	0.25
7	gperv	0.37	0.25
8	gigrcolv	0.37	0.25
9	ggndv	0.37	0.25
10	gassv	0.37	0.25

Table 14: Bayes R2 Score - Three-way Interaction

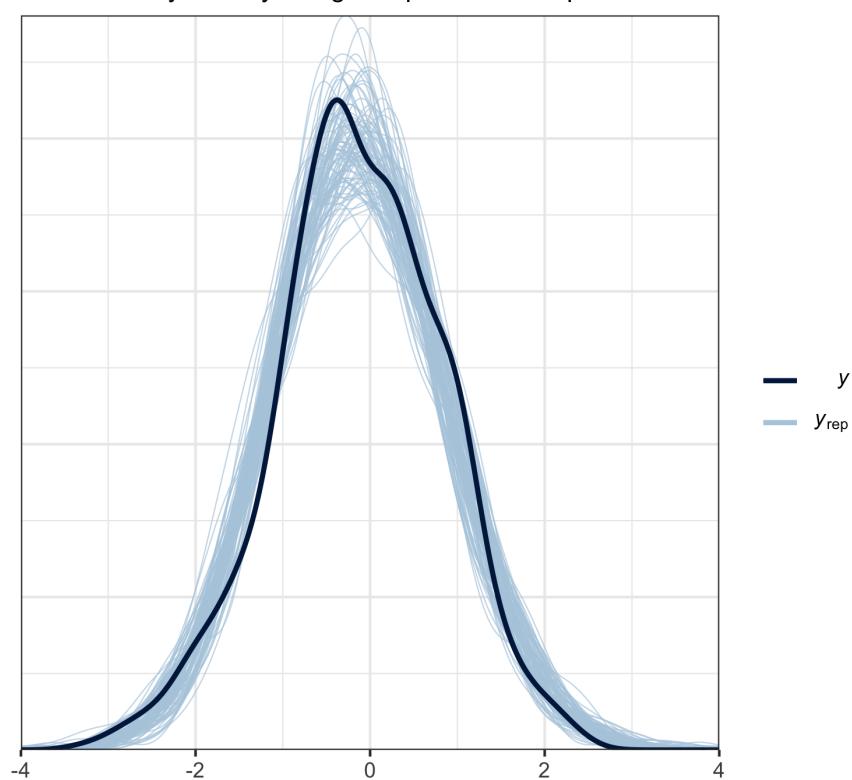
Posterior Predictive Check (Agility Model [T] on UAI)

Note: Density overlay using 100 posterior samples



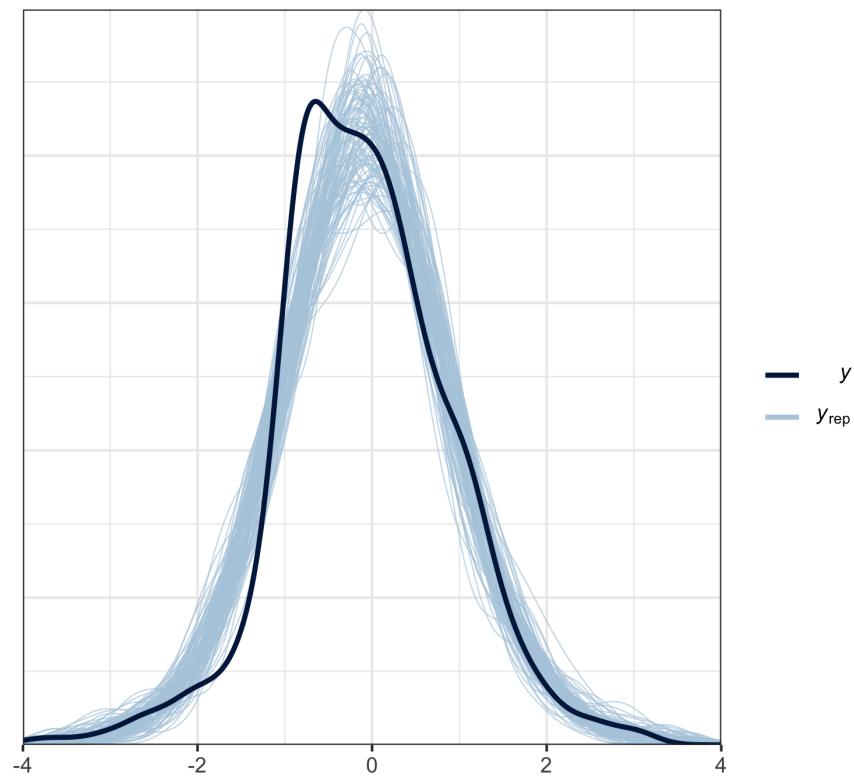
Posterior Predictive Check (Agility Model [Z] on UAI)

Note: Density overlay using 100 posterior samples



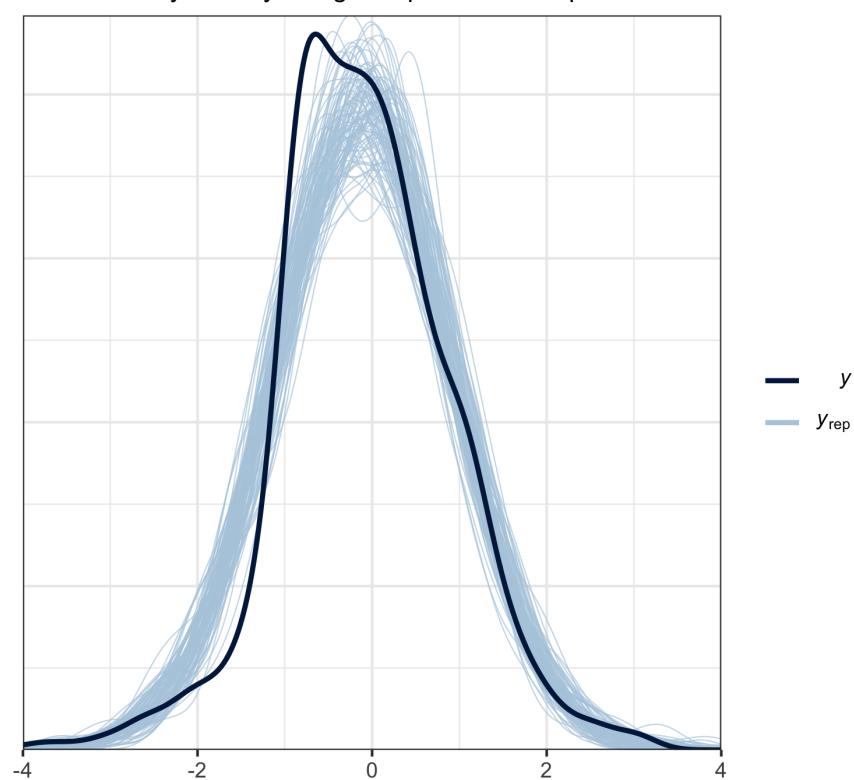
Posterior Predictive Check (Outcome Model [T] on UAI)

Note: Density overlay using 100 posterior samples



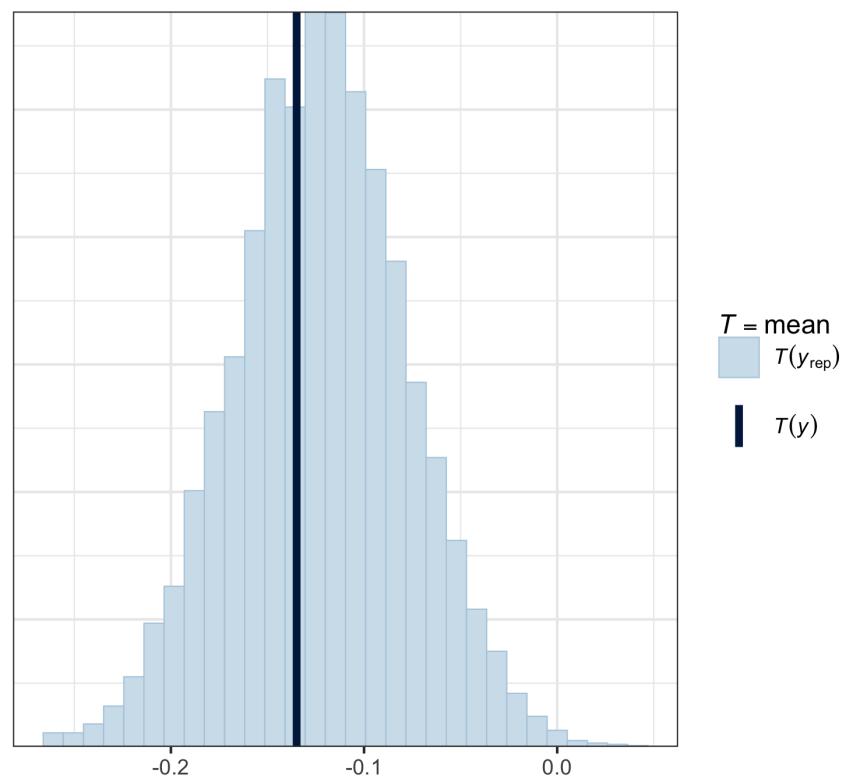
Posterior Predictive Check (Outcome Model [Z] on UAI)

Note: Density overlay using 100 posterior samples



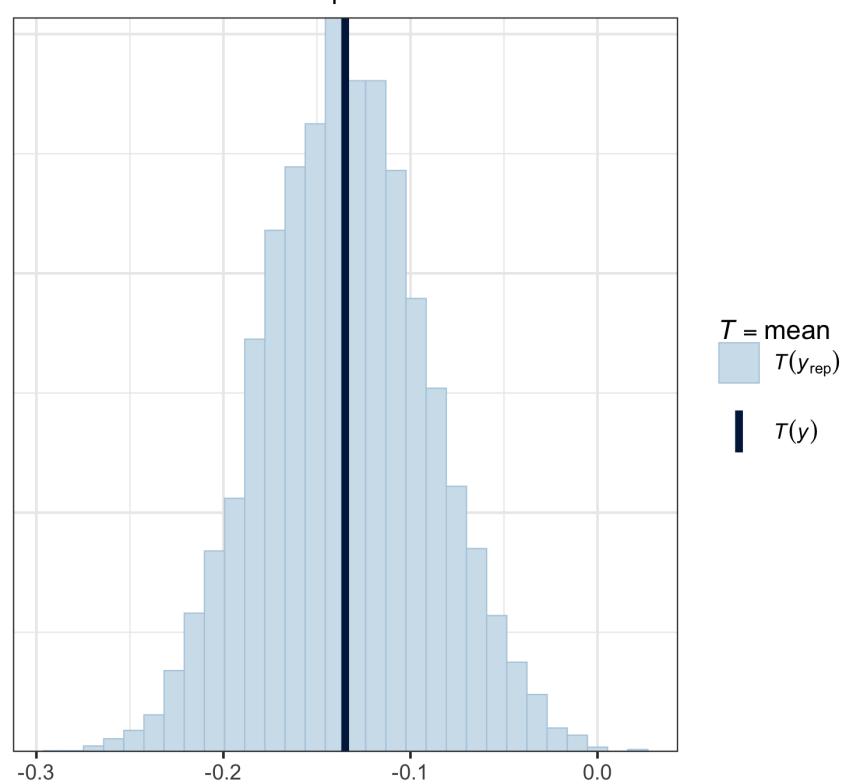
Posterior Predictive Check (Agility Model [T] on UAI)

Note: How well did Stan capture the mean?



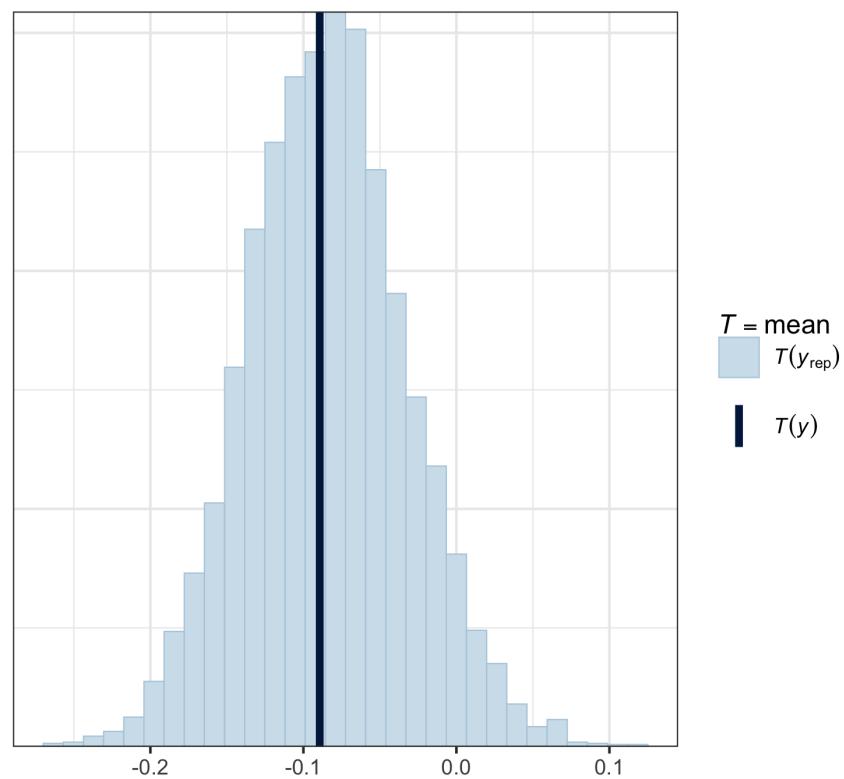
Posterior Predictive Check (Agility Model [Z] on UAI)

Note: How well did Stan capture the mean?



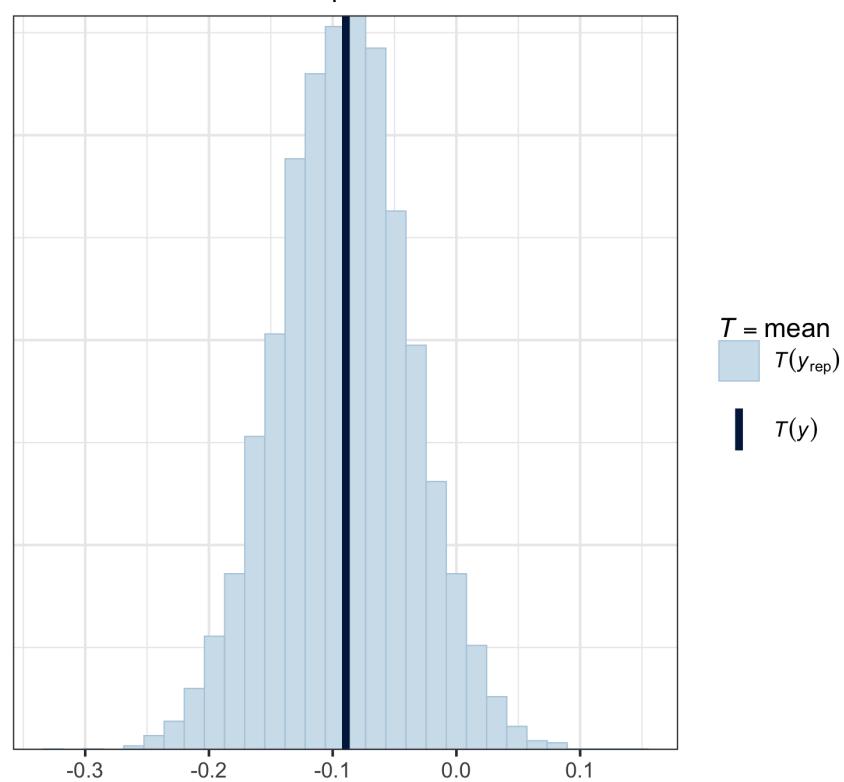
Posterior Predictive Check (Outcome Model [T] on UAI)

Note: How well did Stan capture the mean?



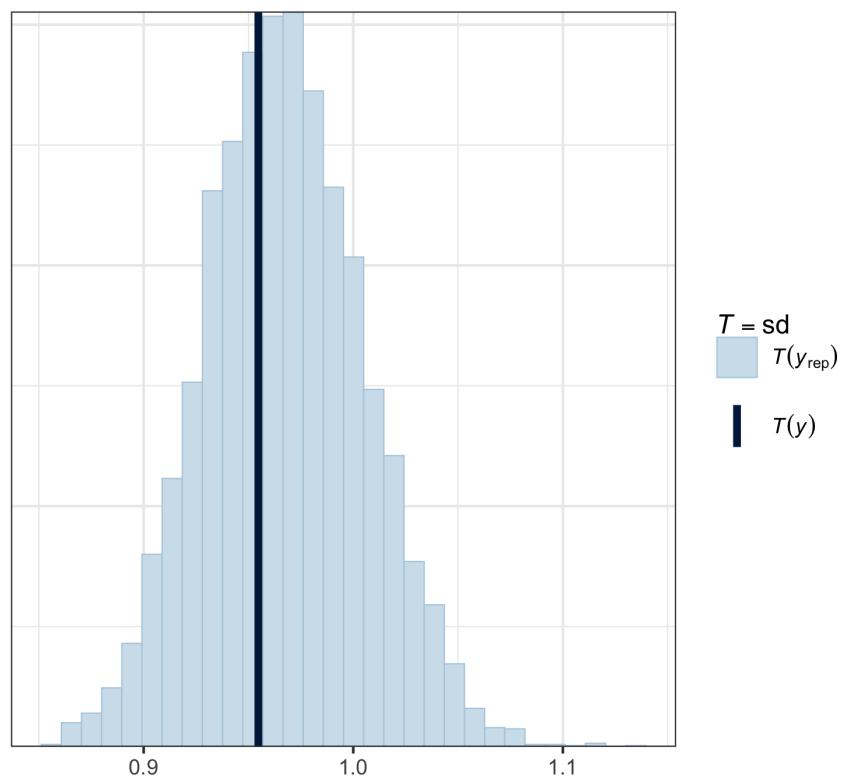
Posterior Predictive Check (Outcome Model [Z] on UAI)

Note: How well did Stan capture the mean?



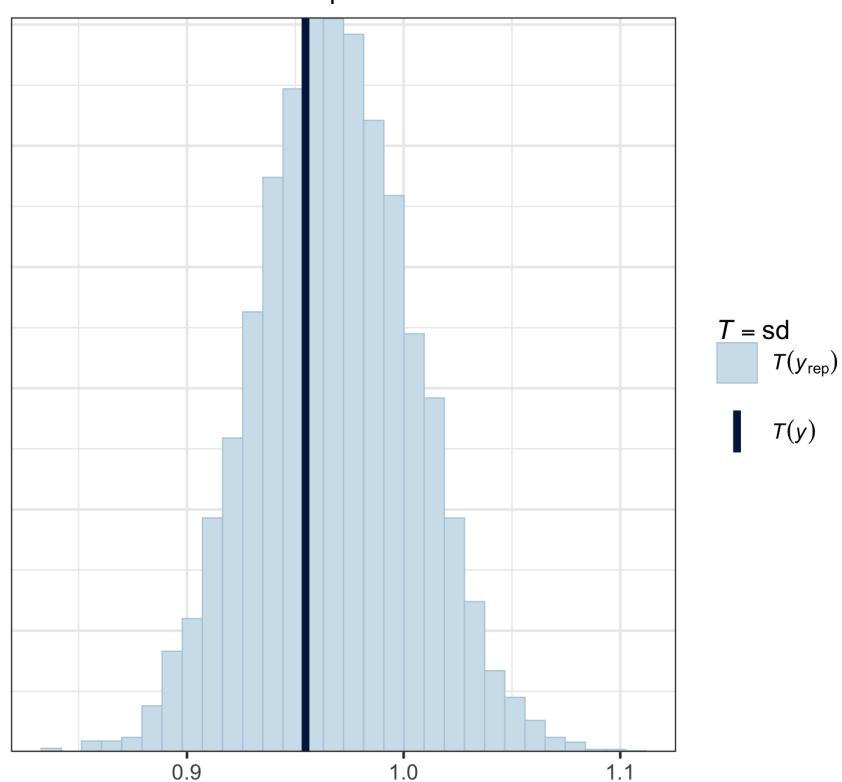
Posterior Predictive Check (Agility Model [T] on UAI)

Note: How well did Stan capture the standard deviation?



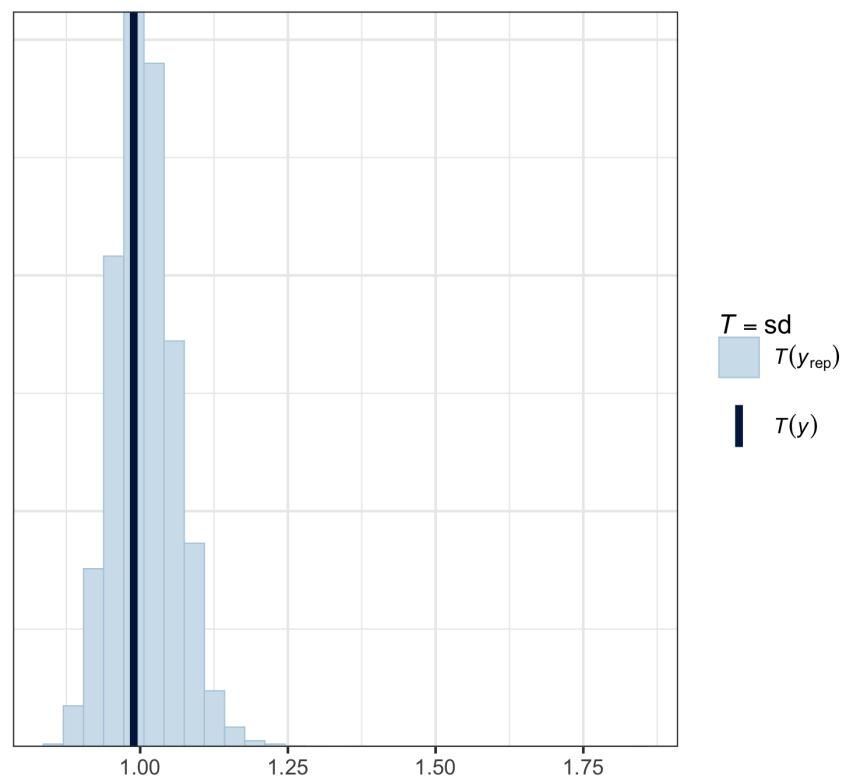
Posterior Predictive Check (Agility Model [Z] on UAI)

Note: How well did Stan capture the standard deviation?



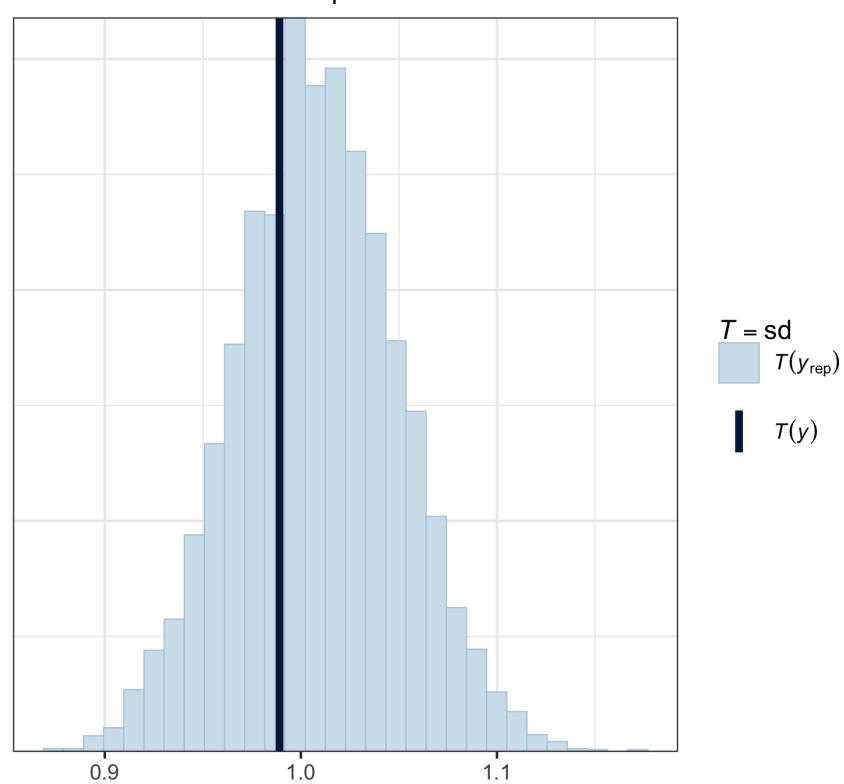
Posterior Predictive Check (Outcome Model [T] on UAI)

Note: How well did Stan capture the standard deviation?



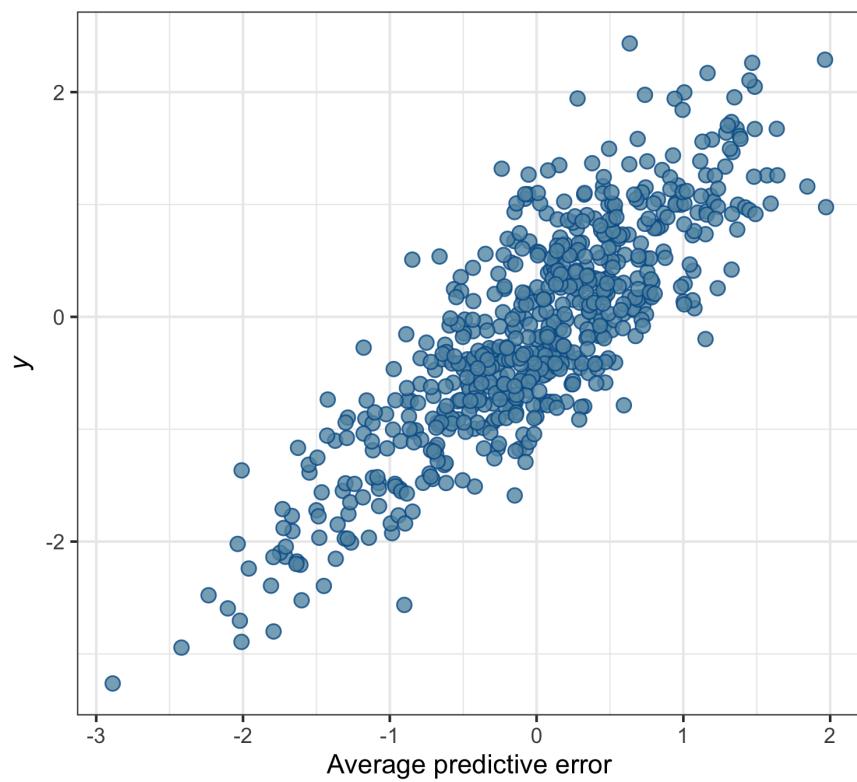
Posterior Predictive Check (Outcome Model [Z] on UAI)

Note: How well did Stan capture the standard deviation?



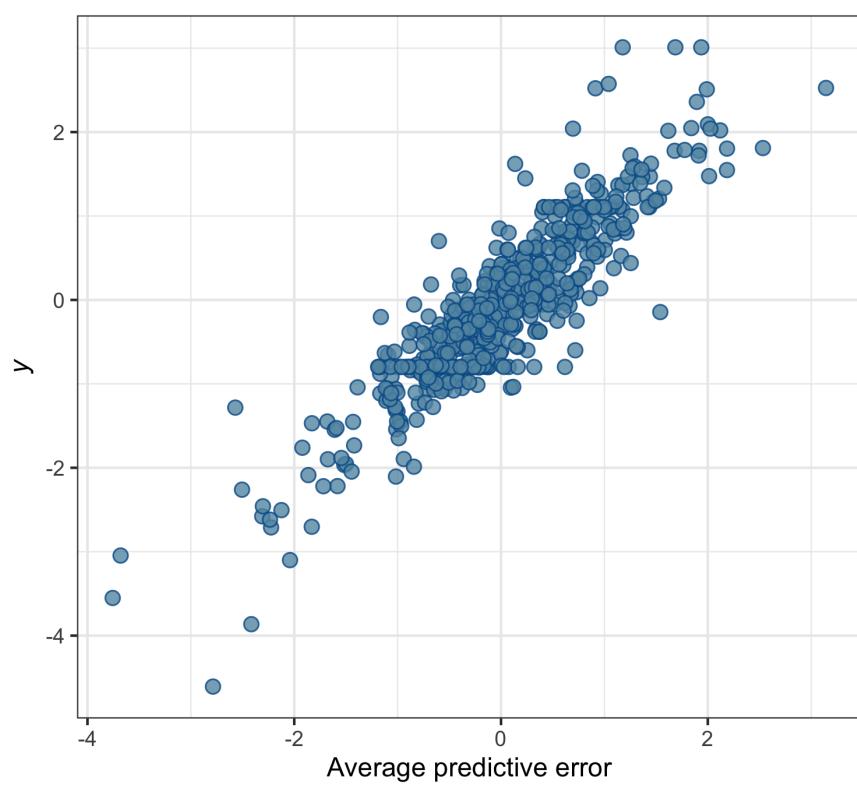
Posterior Predictive Check (Agility Model [T] on UAI)

Note: Predictive Error



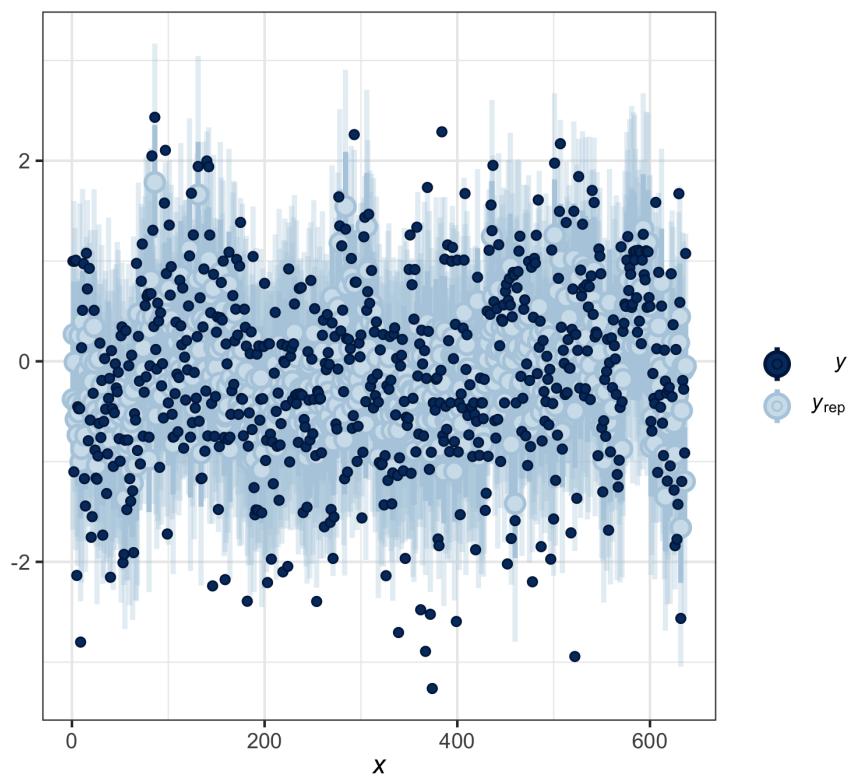
Posterior Predictive Check (Outcome Model [T] on UAI)

Note: Predictive Error



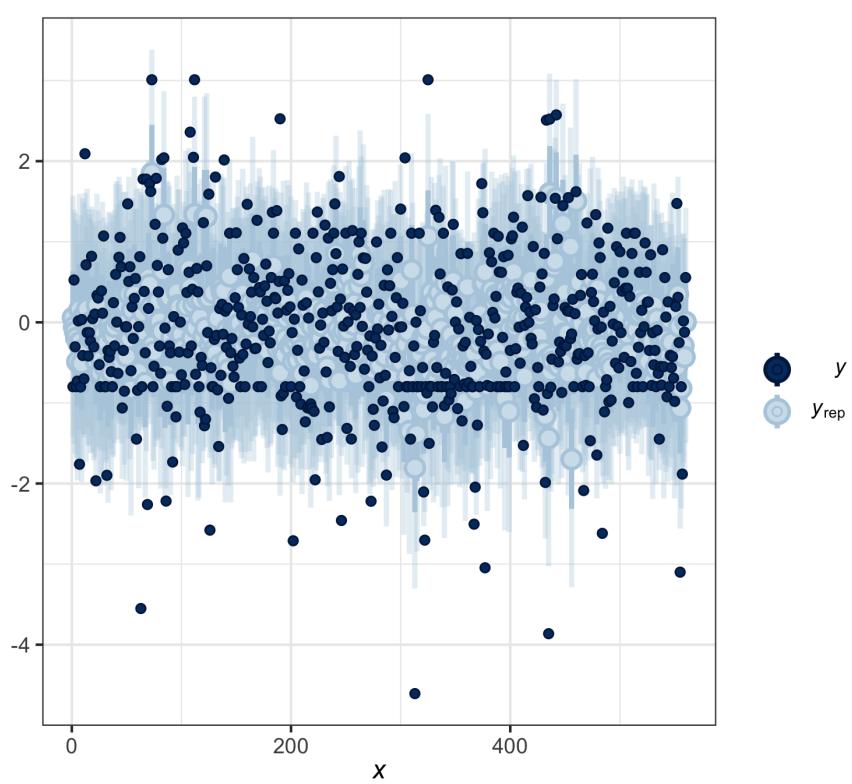
Posterior Predictive Check (Agility Model [T] on UAI)

Note: Intervals



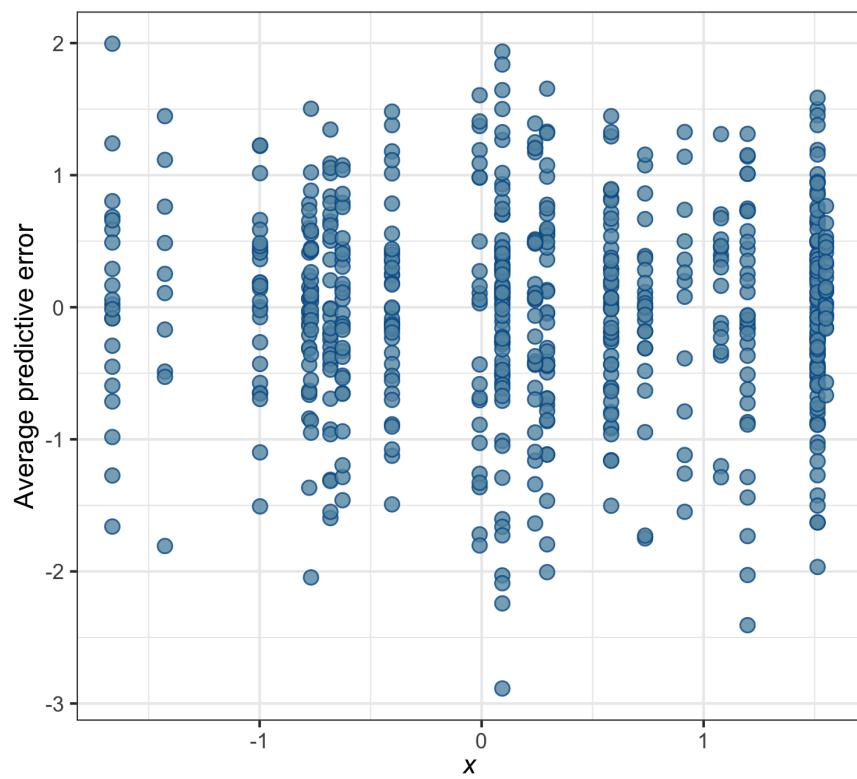
Posterior Predictive Check (Outcome Model [T] on UAI)

Note: Intervals



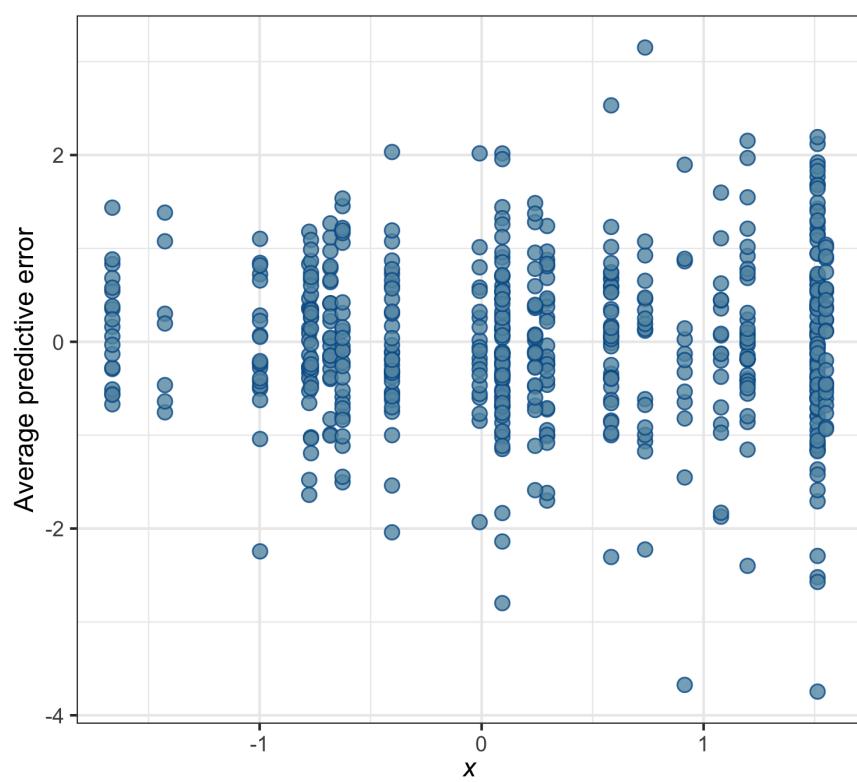
Posterior Predictive Check (Agility Model [T] on UAI)

Note: Predictive errors on Cultural Dimension



Posterior Predictive Check (Outcome Model [T] on UAI)

Note: Predictive errors on Cultural Dimension



5 Post-Estimate Analysis