

# The Impact of National Culture in Operations and Supply Chain Agility

Zhezhu Wen

May 21, 2021

## Abstract

## 1 Preliminary Observations

### 1.1 Correlation Coefficients

Table 1: Correlation Coefficients: GLOBE Value Dimensions

	guaiv	gfuov	gpdiv	ginscolv	ghumv	gperv	gigrcolv	ggndv	gassv
guaiv	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	guaiv	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
guaiv	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	−0.09	−0.09	−0.09	−0.08	−0.09	−0.08	−0.09	−0.09*
	[−0.20; 0.01]	[−0.19; 0.01]	[−0.20; 0.02]	[−0.20; 0.01]	[−0.18; 0.03]	[−0.19; 0.03]	[−0.18; 0.03]	[−0.20; 0.02]	[−0.17; −0.00]
b_mfr2013.z	−0.04	−0.05	−0.05	−0.03	−0.05	−0.03	−0.06	−0.04	0.09
	[−0.13; 0.06]	[−0.14; 0.04]	[−0.16; 0.06]	[−0.12; 0.06]	[−0.15; 0.04]	[−0.13; 0.06]	[−0.16; 0.04]	[−0.14; 0.06]	[−0.01; 0.19]
b_firmsize.adj.cj	0.00	0.01	0.00	0.02	0.01	0.01	0.01	0.00	0.01
	[−0.09; 0.10]	[−0.09; 0.10]	[−0.09; 0.10]	[−0.08; 0.11]	[−0.09; 0.10]	[−0.09; 0.10]	[−0.08; 0.10]	[−0.09; 0.09]	[−0.08; 0.10]
b_strategycj	0.18*	0.17*	0.17*	0.17*	0.18*	0.17*	0.18*	0.18*	0.17*
	[0.11; 0.24]	[0.11; 0.24]	[0.11; 0.24]	[0.11; 0.24]	[0.11; 0.24]	[0.11; 0.24]	[0.11; 0.24]	[0.11; 0.24]	[0.11; 0.24]
b_agility2cj	0.27*	0.27*	0.27*	0.24*	0.28*	0.27*	0.27*	0.27*	0.27*
	[0.15; 0.38]	[0.15; 0.38]	[0.15; 0.38]	[0.15; 0.33]	[0.16; 0.39]	[0.16; 0.38]	[0.15; 0.39]	[0.15; 0.38]	[0.14; 0.39]
b_network2xcj	0.06	0.04	0.07	0.04	0.05	0.05	0.03	0.05	0.06
	[−0.10; 0.22]	[−0.12; 0.20]	[−0.08; 0.23]	[−0.11; 0.19]	[−0.10; 0.20]	[−0.11; 0.20]	[−0.12; 0.19]	[−0.11; 0.21]	[−0.09; 0.22]
b_cul	0.03	−0.10	0.02	0.05	−0.10	−0.01	−0.09	−0.01	−0.20*
	[−0.09; 0.15]	[−0.20; 0.00]	[−0.11; 0.15]	[−0.06; 0.15]	[−0.22; 0.03]	[−0.12; 0.11]	[−0.20; 0.03]	[−0.12; 0.10]	[−0.31; −0.09]
b_agility2cj:cul	0.06	0.02	0.04	−0.18*	−0.02	−0.09	0.04	−0.05	0.04
	[−0.08; 0.20]	[−0.10; 0.14]	[−0.08; 0.17]	[−0.28; −0.09]	[−0.16; 0.13]	[−0.20; 0.02]	[−0.09; 0.17]	[−0.17; 0.06]	[−0.07; 0.16]
b_network2xcj:cul	−0.07	0.10	−0.12	−0.05	0.17	0.00	0.06	0.04	−0.09
	[−0.23; 0.10]	[−0.04; 0.25]	[−0.26; 0.01]	[−0.19; 0.09]	[−0.00; 0.33]	[−0.13; 0.13]	[−0.09; 0.23]	[−0.10; 0.18]	[−0.22; 0.04]
b_agility2cj:network2xcj:cul	0.15	−0.06	0.12	−0.30*	−0.09	−0.22*	−0.09	−0.23*	0.17
	[−0.11; 0.39]	[−0.29; 0.16]	[−0.09; 0.34]	[−0.49; −0.12]	[−0.34; 0.17]	[−0.38; −0.05]	[−0.32; 0.15]	[−0.41; −0.02]	[−0.02; 0.35]
sd_countryx__Intercept	0.21*	0.20*	0.23*	0.22*	0.21*	0.23*	0.21*	0.22*	0.13*
	[0.11; 0.33]	[0.11; 0.32]	[0.13; 0.36]	[0.12; 0.34]	[0.11; 0.33]	[0.13; 0.35]	[0.12; 0.33]	[0.12; 0.34]	[0.02; 0.25]
sd_countryx__network4xcj	0.05*	0.05*	0.04*	0.04*	0.04*	0.05*	0.05*	0.05*	0.05*
	[0.00; 0.12]	[0.00; 0.12]	[0.00; 0.11]	[0.00; 0.11]	[0.00; 0.10]	[0.00; 0.12]	[0.00; 0.13]	[0.00; 0.12]	[0.00; 0.13]
sd_countryx__agility2cj	0.21*	0.23*	0.23*	0.12*	0.23*	0.18*	0.24*	0.21*	0.24*
	[0.09; 0.35]	[0.12; 0.36]	[0.11; 0.36]	[0.02; 0.24]	[0.12; 0.37]	[0.05; 0.33]	[0.13; 0.37]	[0.09; 0.35]	[0.13; 0.38]
sd_countryx__agility2cj:network2xcj	0.30*	0.36*	0.34*	0.18*	0.35*	0.19*	0.32*	0.23*	0.32*
	[0.07; 0.56]	[0.15; 0.62]	[0.12; 0.59]	[0.02; 0.42]	[0.13; 0.61]	[0.02; 0.44]	[0.09; 0.57]	[0.03; 0.47]	[0.09; 0.58]
sigma	0.76*	0.75*	0.75*	0.76*	0.75*	0.76*	0.75*	0.76*	0.75*
	[0.69; 0.82]	[0.69; 0.82]	[0.69; 0.82]	[0.69; 0.83]	[0.68; 0.82]	[0.69; 0.83]	[0.68; 0.82]	[0.69; 0.82]	[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	guaiv	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	guaiv	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

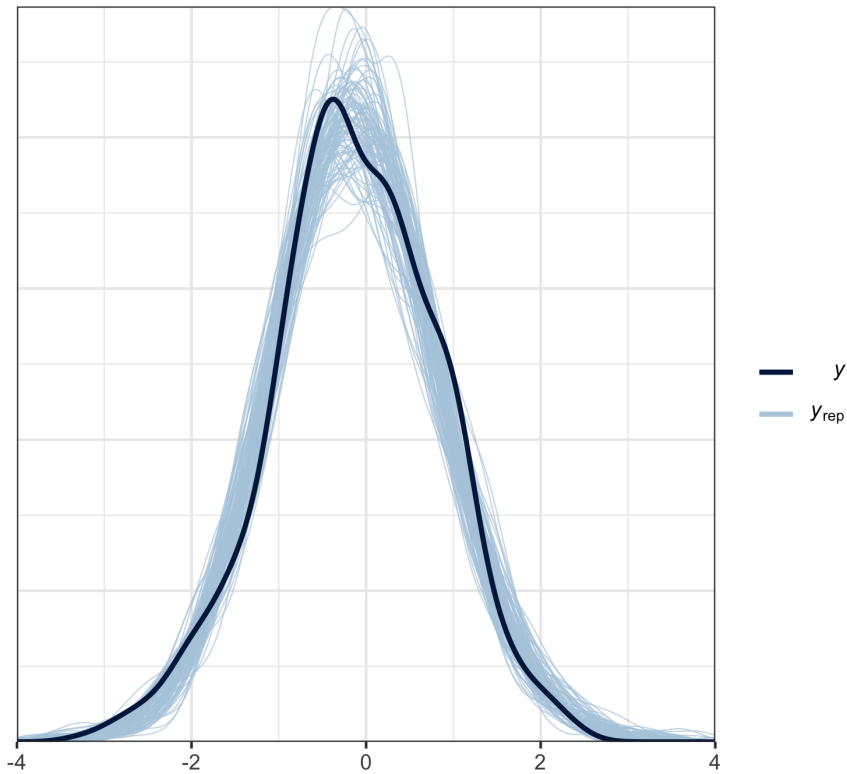
	model	agility2.z	outcome2.z	agility2.t	outcome2.t
1	control	0.28	0.11	0.28	0.10
2	guaiv	0.34	0.23	0.33	0.23
3	gfuov	0.33	0.23	0.33	0.22
4	gpdiv	0.34	0.23	0.34	0.23
5	ginscolv	0.35	0.24	0.34	0.24
6	ghumv	0.33	0.23	0.33	0.23
7	gperv	0.35	0.23	0.35	0.23
8	gigrcolv	0.34	0.23	0.34	0.22
9	ggndv	0.34	0.24	0.34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

Table 13: Bayes R2 Score

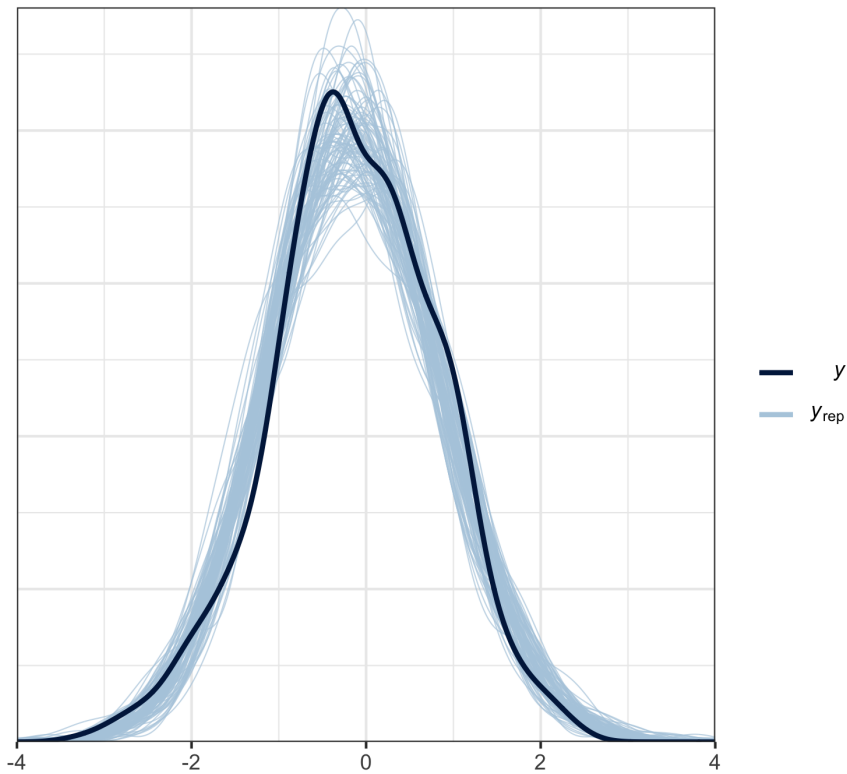
	model	agility2.z	outcome2.t
1	control	0.28	0.10
2	guaiv	0.37	0.25
3	gfuov	0.37	0.25
4	gpdiv	0.37	0.25
5	ginscolv	0.38	0.25
6	ghumv	0.37	0.25
7	gperv	0.37	0.25
8	gigrcolv	0.37	0.25
9	ggndv	0.37	0.25
10	gassv	0.37	0.25

Table 14: Bayes R2 Score - Three-way Interaction

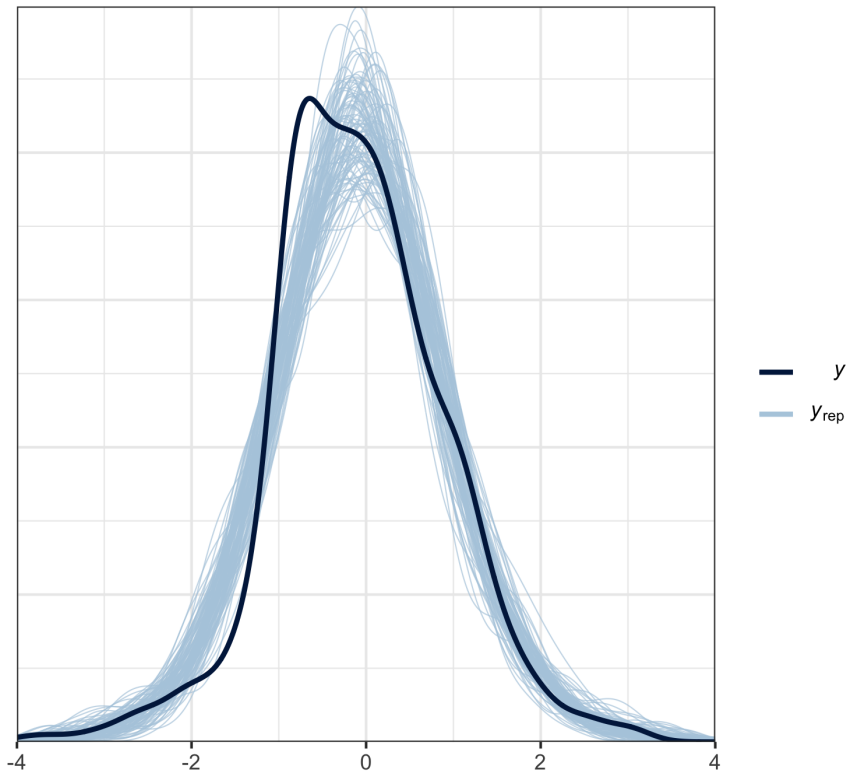
Posterior Predictive Check (Agility Model [T] on UAI)  
Note: Density overlay using 100 posterior samples



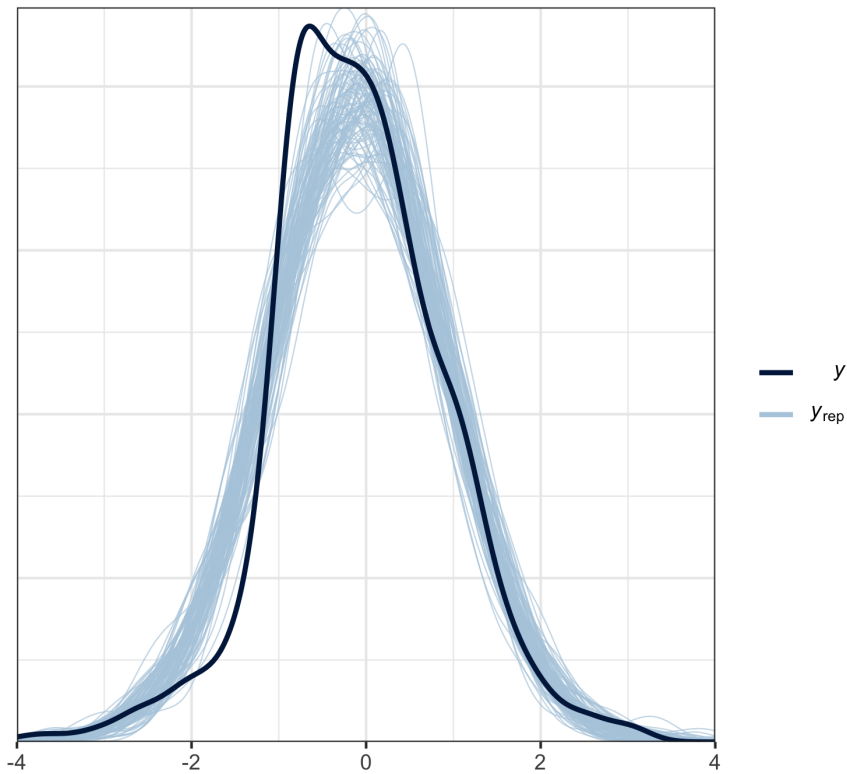
Posterior Predictive Check (Agility Model [Z] on UAI)  
Note: Density overlay using 100 posterior samples



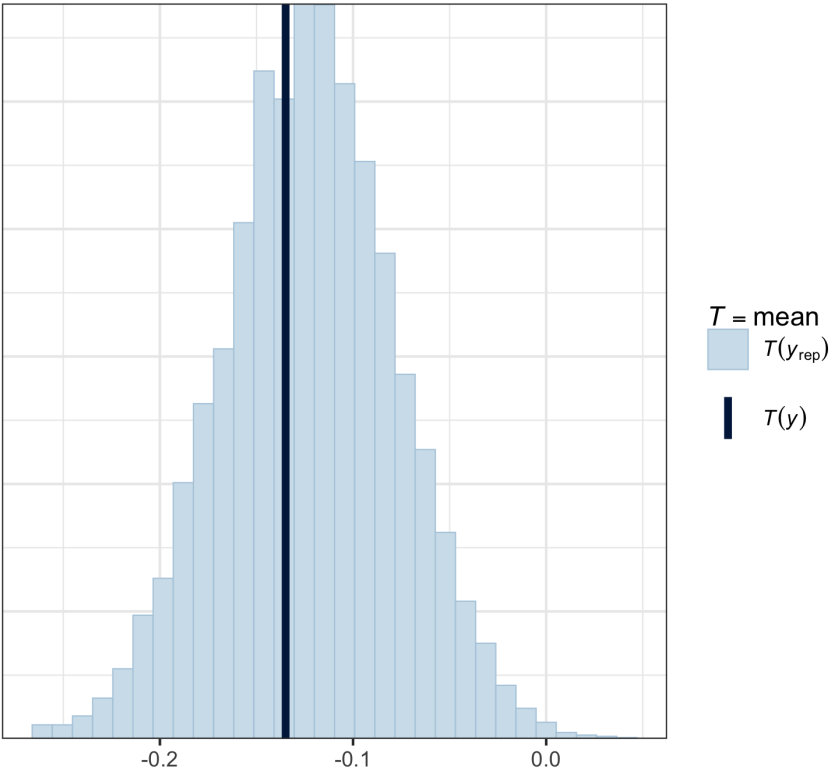
Posterior Predictive Check (Outcome Model [T] on UAI)  
Note: Density overlay using 100 posterior samples



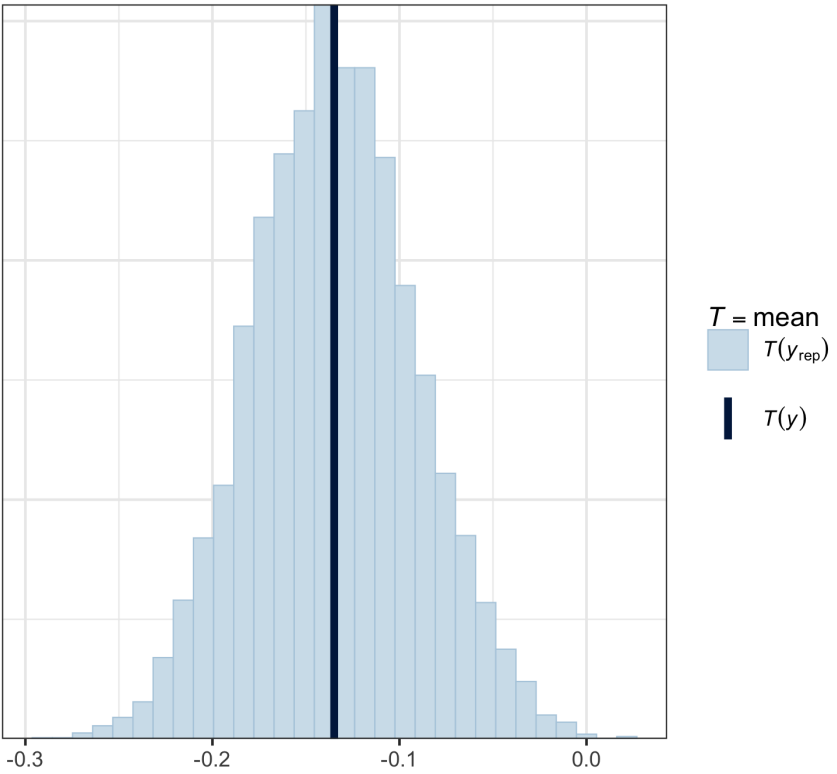
Posterior Predictive Check (Outcome Model [Z] on UAI)  
Note: Density overlay using 100 posterior samples



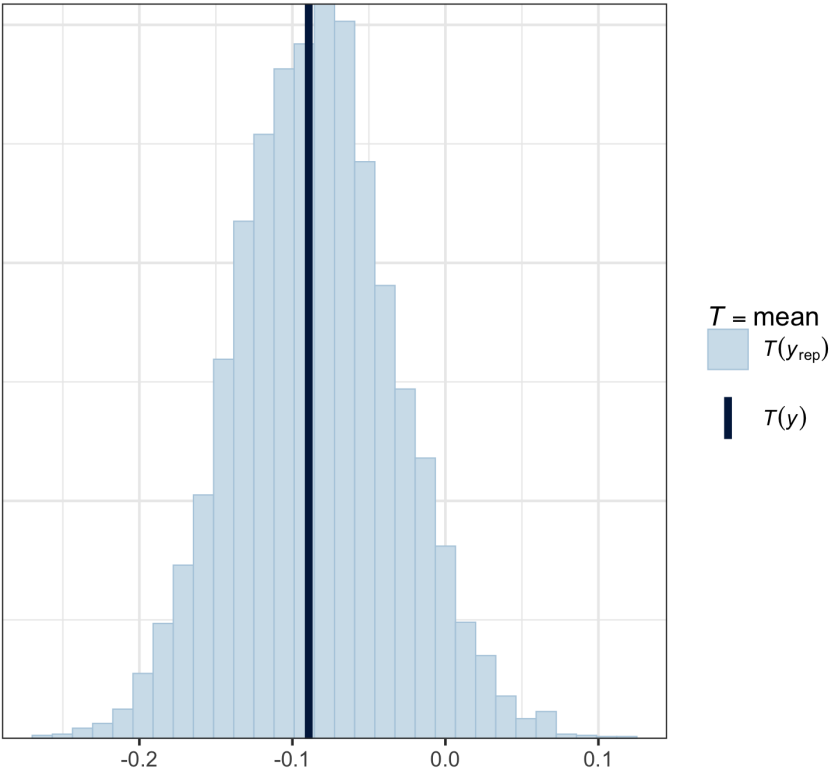
Posterior Predictive Check (Agility Model [T] on UAI)  
Note: How well did Stan capture the mean?



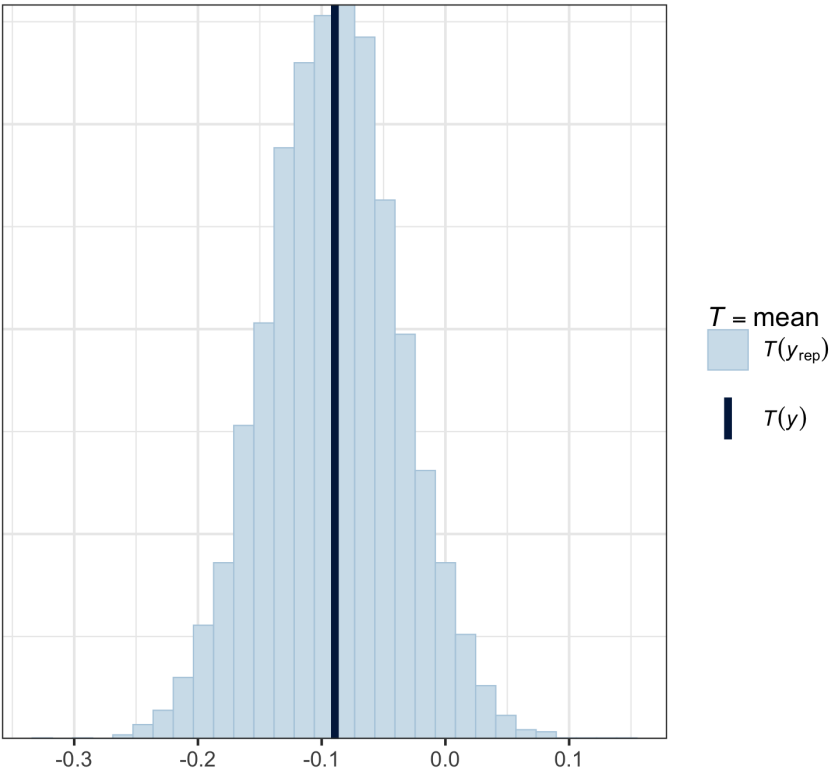
Posterior Predictive Check (Agility Model [Z] on UAI)  
Note: How well did Stan capture the mean?



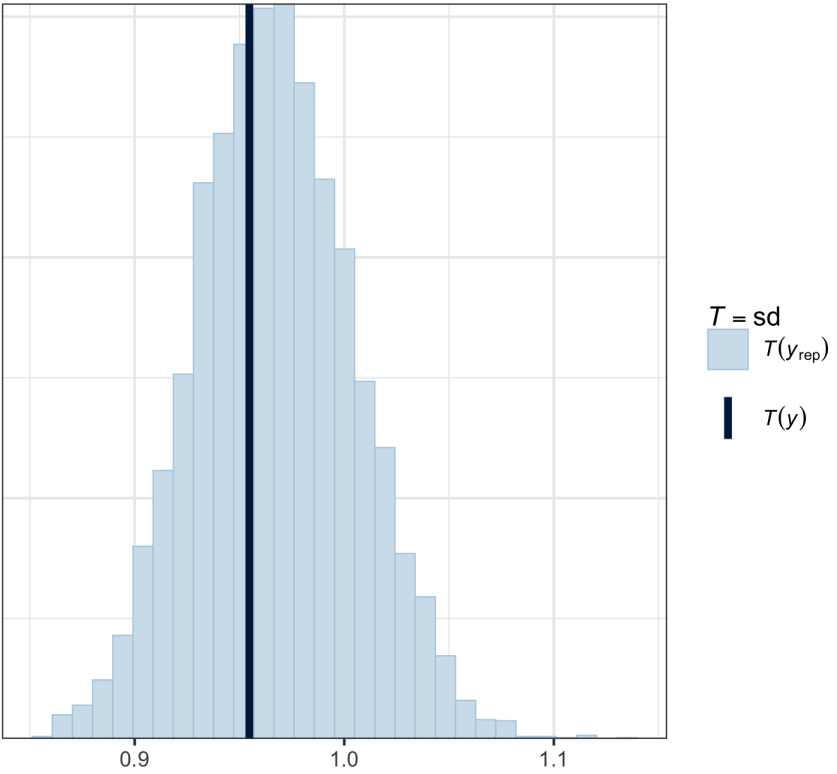
Posterior Predictive Check (Outcome Model [T] on UAI)  
Note: How well did Stan capture the mean?



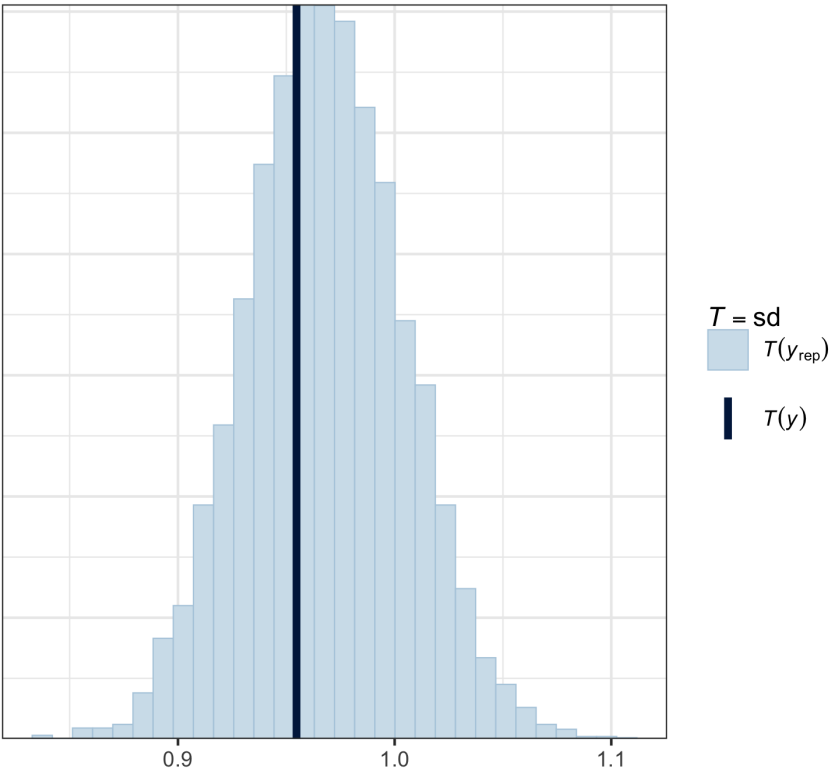
Posterior Predictive Check (Outcome Model [Z] on UAI)  
Note: How well did Stan capture the mean?



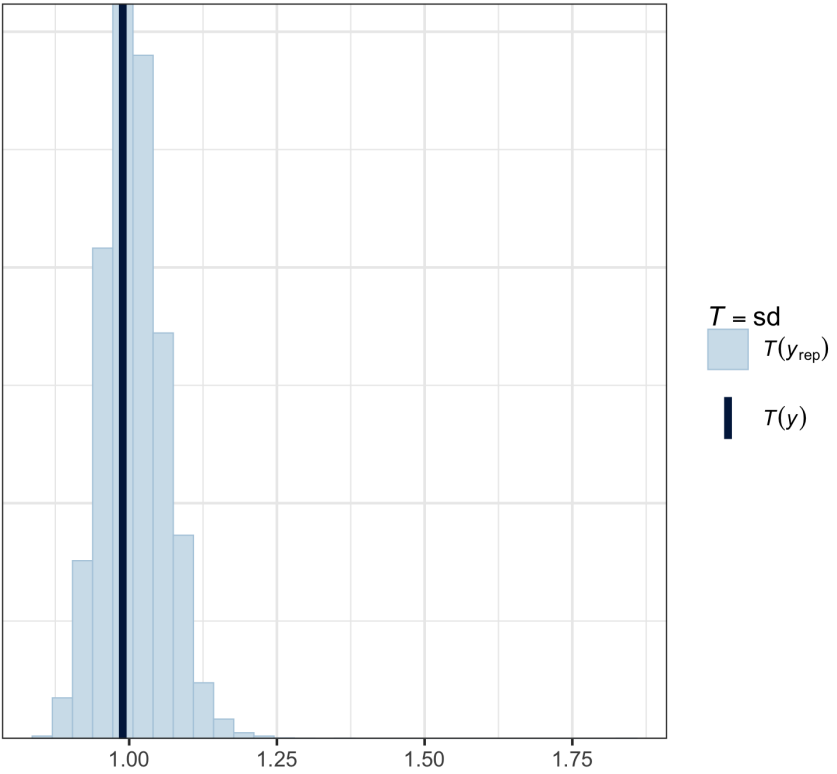
Posterior Predictive Check (Agility Model [T] on UAI)  
Note: How well did Stan capture the standard deviation?



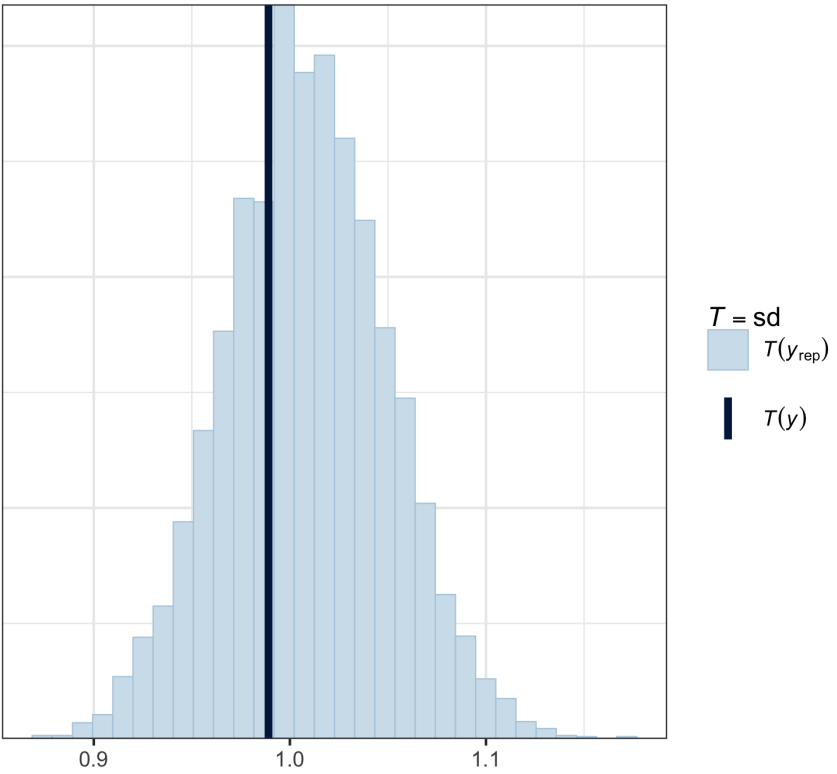
Posterior Predictive Check (Agility Model [Z] on UAI)  
Note: How well did Stan capture the standard deviation?



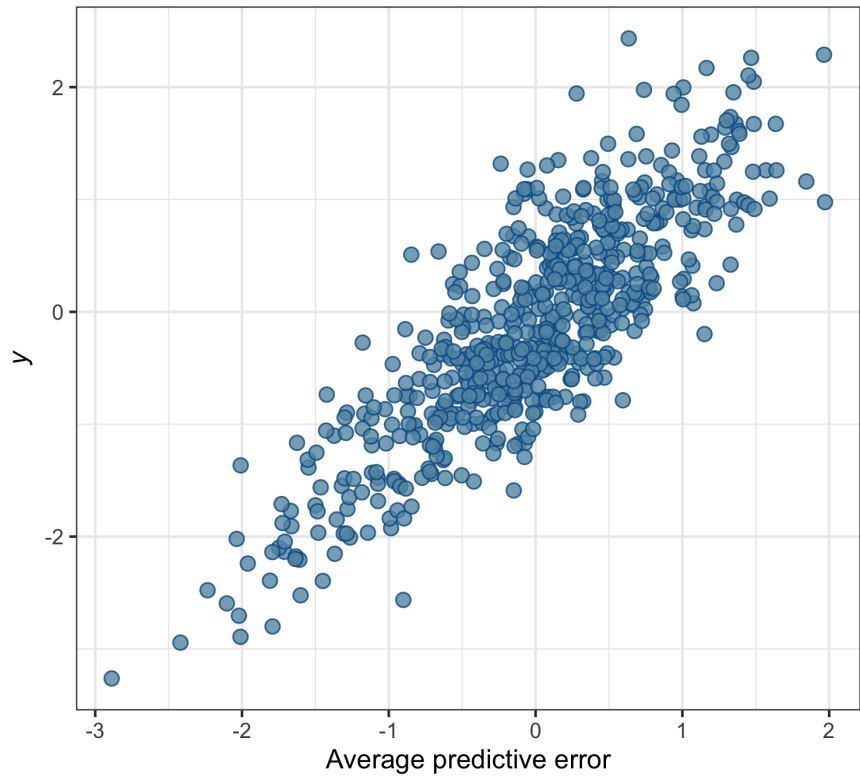
Posterior Predictive Check (Outcome Model [T] on UAI)  
Note: How well did Stan capture the standard deviation?



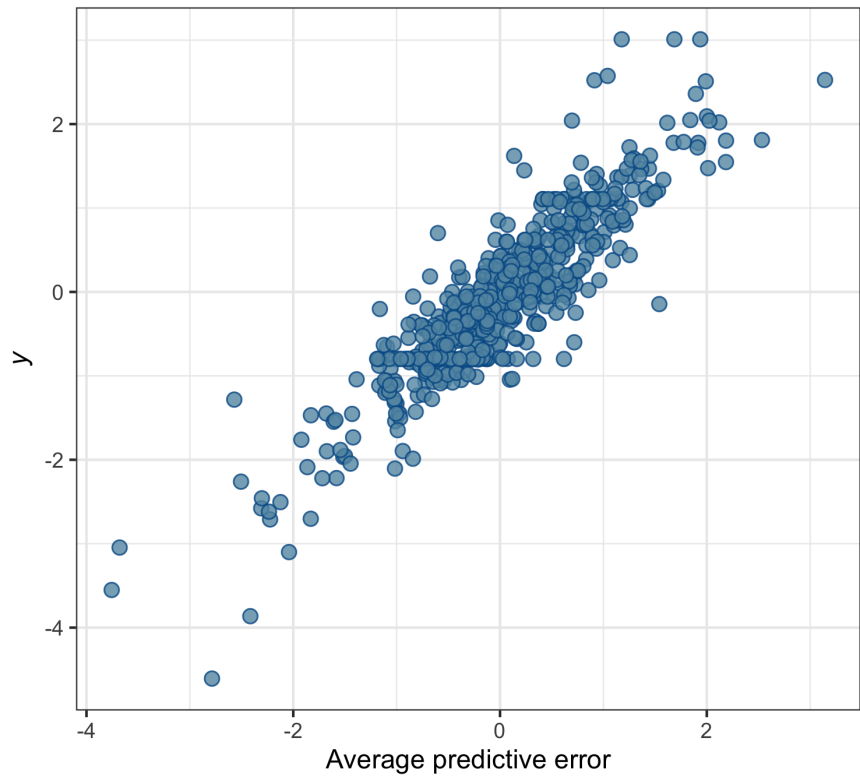
Posterior Predictive Check (Outcome Model [Z] on UAI)  
Note: How well did Stan capture the standard deviation?



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

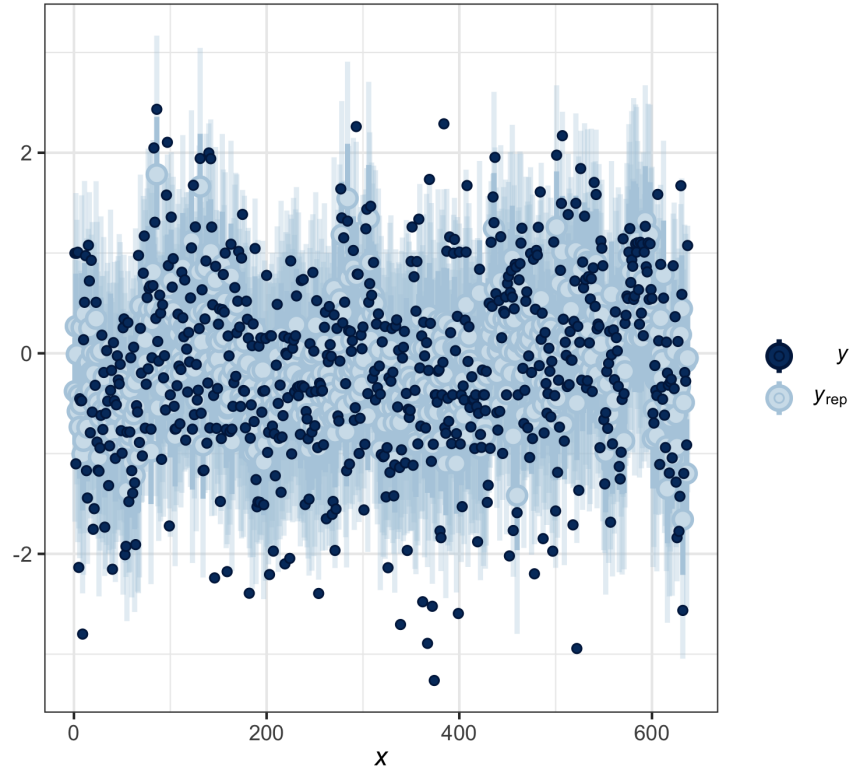


Posterior Predictive Check (Outcome Model [T] on UAI)  
Note: Predictive Error



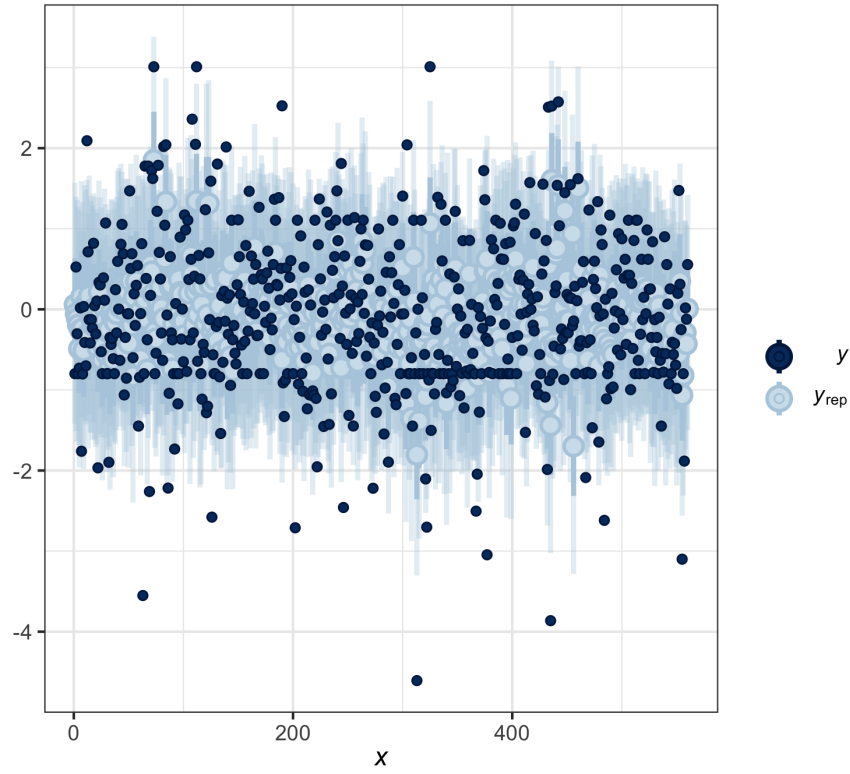
Posterior Predictive Check (Agility Model [T] on UAI)

Note: Intervals

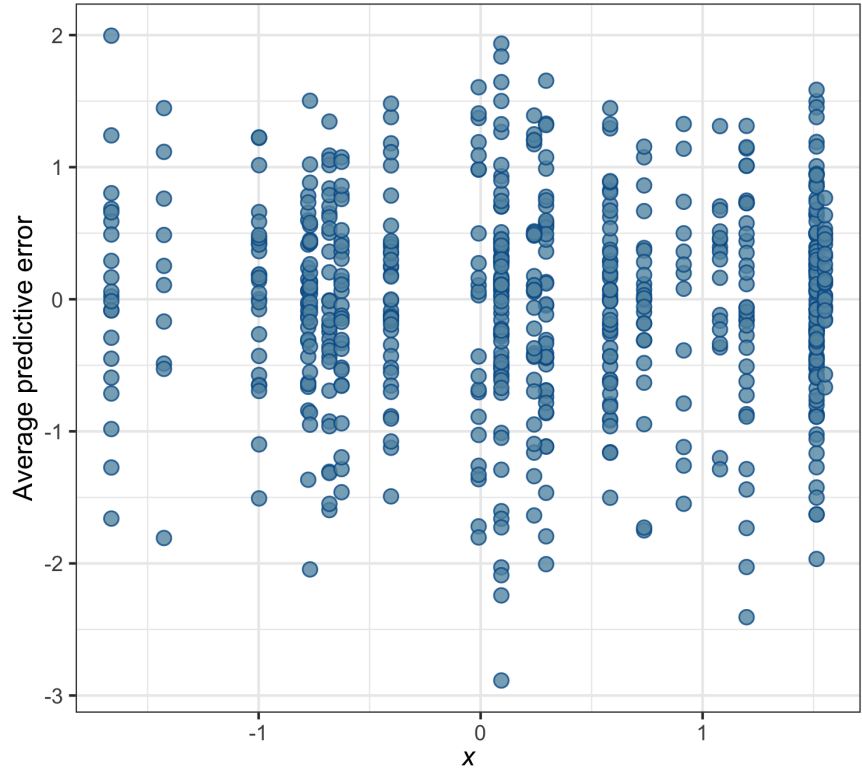


Posterior Predictive Check (Outcome Model [T] on UAI)

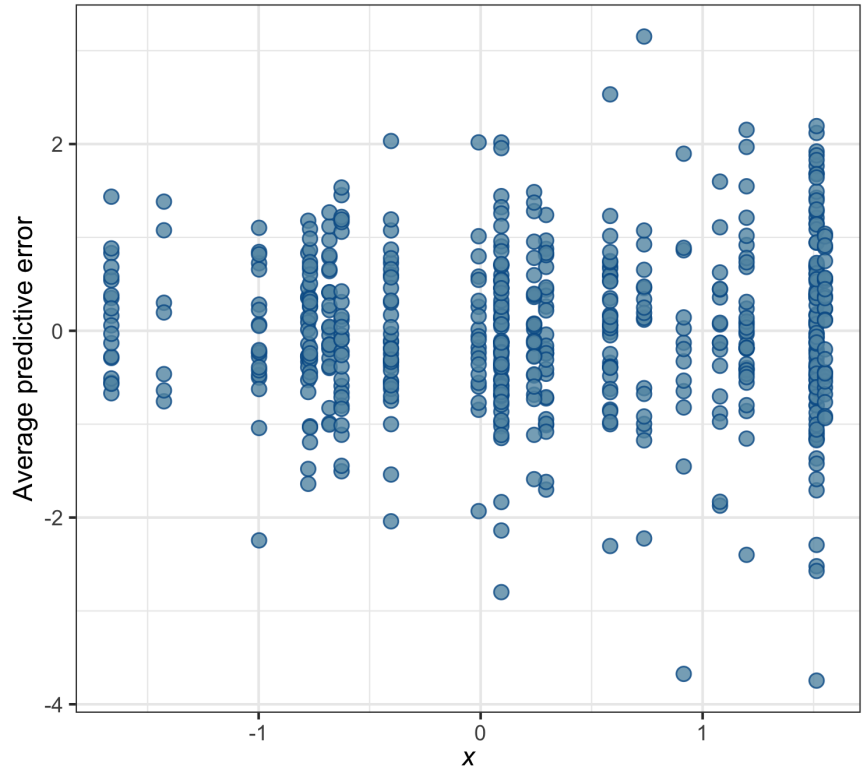
Note: Intervals



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