Appendices of Paper "Modeling Temporal Target Selection: A Perspective from Its Spatial Correspondence"

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1 STUDY 1

1.1 Normality Assumption of RM-ANOVA

Dependent variables (μ, σ, and error rate) were determined to be approximately normally distributed based on the following Q-Q plots. We, therefore, apply parametric analysis (repeated-measures ANOVA) for significance tests.

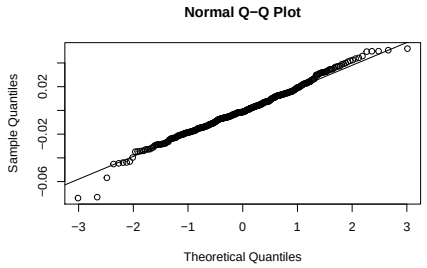

Figure 1: Q-Q plot with μ as the dependent variable.

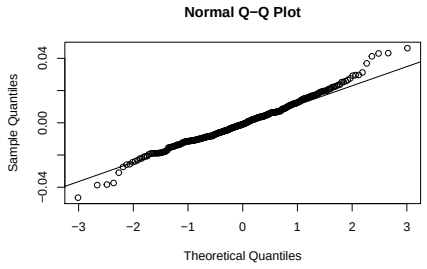

Figure 2: Q-Q plot with σ as the dependent variable.

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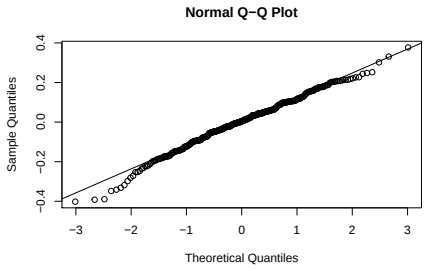

Figure 3: Q-Q plot with error rate as the dependent variable.

1.2 RM-ANOVA for Error Rate

Table 1: Statistical effects of factors on error rates.

Factor	df_{effect}	df_{error}	F	p	η^2_G	Sig?
D_t	1.374	20.603	30.617	.000	.225	**yes**
W_t	1	15	622.711	.000	.636	**yes**
R_t	3	45	43.991	.000	.295	**yes**
$D_t \times W_t$	1.437	21.553	93.692	.000	.253	**yes**
$D_t \times R_t$	6	90	20.317	.000	.216	**yes**
$W_t \times R_t$	3	45	7.489	.000	.047	**yes**
$D_t \times W_t \times R_t$	6	90	4.550	.000	.057	**yes**

1.3 Post-Hoc Analysis of RM-ANOVA

Bonferroni-adjusted pairwise comparisons were applied for post-hoc analysis.

```
# Pairwise comparison of $D_t$ regarding $\mu$.
contrast  estimate      SE  df t.ratio p.value
0.4 - 0.5   0.0596 0.00258 360 23.099  <.0001
0.4 - 0.6   0.0978 0.00258 360 37.902  <.0001
0.5 - 0.6   0.0382 0.00258 360 14.803  <.0001

# Pairwise comparison of $W_t$ regarding $\mu$.
contrast  estimate      SE  df t.ratio p.value
0.1 - 0.2  -0.0144 0.00211 360 -6.860  <.0001

# Pairwise comparison of $R_t$ regarding $\mu$.
contrast     estimate      SE  df t.ratio p.value
0.05 - 0.1  -0.000273 0.00298 360 -0.092  1.0000
0.05 - 0.15 -0.015706 0.00298 360 -5.273  <.0001
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0.05 - 0.2  -0.019363 0.00298 360 -6.501  <.0001
0.1 - 0.15  -0.015433 0.00298 360 -5.181  <.0001
0.1 - 0.2   -0.019090 0.00298 360 -6.409  <.0001
0.15 - 0.2  -0.003657 0.00298 360 -1.228  1.0000

and
# Pairwise comparison of $D_t$ regarding $\sigma$.
contrast  estimate      SE  df t.ratio p.value
0.4 - 0.5  -0.0145 0.00171 360  -8.516 <.0001
0.4 - 0.6  -0.0341 0.00171 360 -19.967 <.0001
0.5 - 0.6  -0.0195 0.00171 360 -11.451 <.0001

# Pairwise comparison of $W_t$ regarding $\sigma$.
contrast  estimate      SE  df t.ratio p.value
0.1 - 0.2 -0.00436 0.00139 360 -3.131  0.0019

# Pairwise comparison of $R_t$ regarding $\sigma$.
contrast     estimate      SE  df t.ratio p.value
0.05 - 0.1  -0.003437 0.00197 360 -1.744  0.4920
0.05 - 0.15 -0.004712 0.00197 360 -2.391  0.1040
0.05 - 0.2  -0.004830 0.00197 360 -2.451  0.0884
0.1 - 0.15  -0.001274 0.00197 360 -0.647  1.0000
0.1 - 0.2   -0.001393 0.00197 360 -0.707  1.0000
0.15 - 0.2  -0.000118 0.00197 360 -0.060  1.0000

and
# Pairwise comparison of $D_t$ regarding error rate.
contrast  estimate     SE  df t.ratio p.value
0.4 - 0.5  -0.1146 0.0161 360 -7.132  <.0001
0.4 - 0.6   0.0446 0.0161 360  2.776  0.0174
0.5 - 0.6   0.1593 0.0161 360  9.908  <.0001

# Pairwise comparison of $W_t$ regarding error rate.
contrast  estimate     SE  df t.ratio p.value
0.1 - 0.2   -0.329 0.0131 360 -25.060 <.0001

# Pairwise comparison of $R_t$ regarding error rate.
contrast    estimate     SE  df t.ratio p.value
0.05 - 0.1    0.0607 0.0186 360  3.272  0.0070
0.05 - 0.15   0.1420 0.0186 360  7.650  <.0001
0.05 - 0.2    0.2126 0.0186 360 11.453  <.0001
0.1 - 0.15    0.0813 0.0186 360  4.378  0.0001
0.1 - 0.2     0.1518 0.0186 360  8.181  <.0001
0.15 - 0.2    0.0706 0.0186 360  3.803  0.0010
```