Econ 675 Assignment 6

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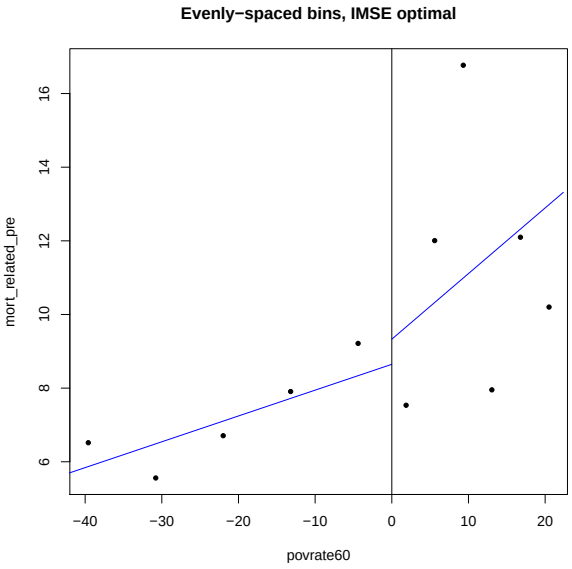
TO DO

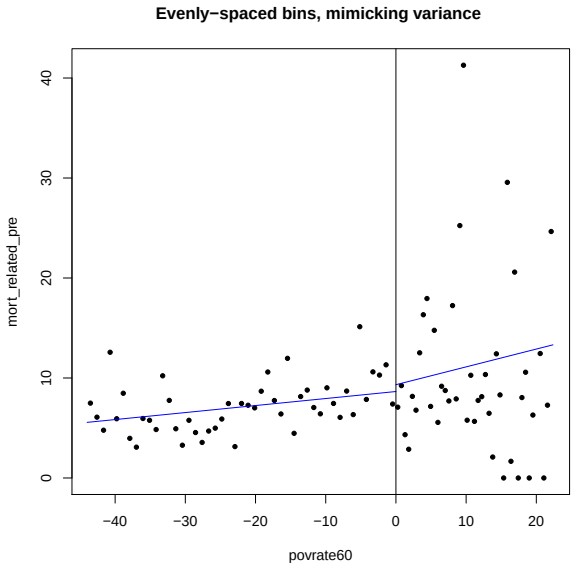
*Shouts out to Ani for the help with question 1

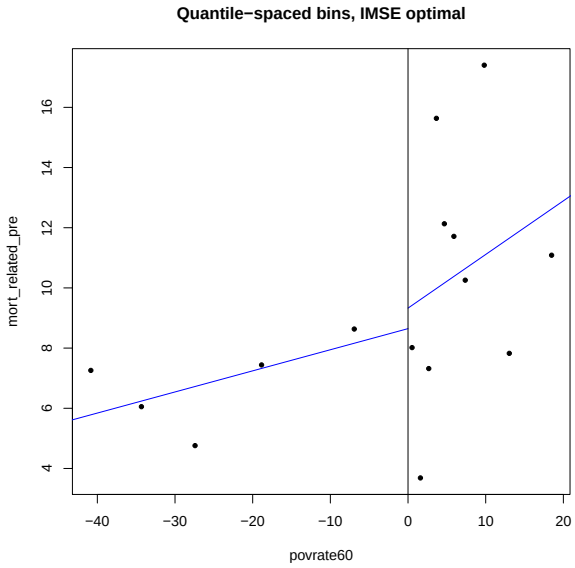
2 Question 2: The Effect of Head Start on Child Mortality

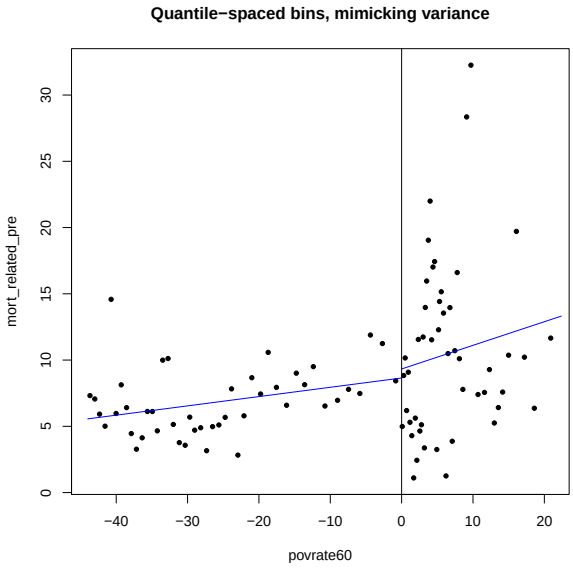
2.1 Q2.1 RD Plots and Falsification Tests

2.1.1 Q2.1.1

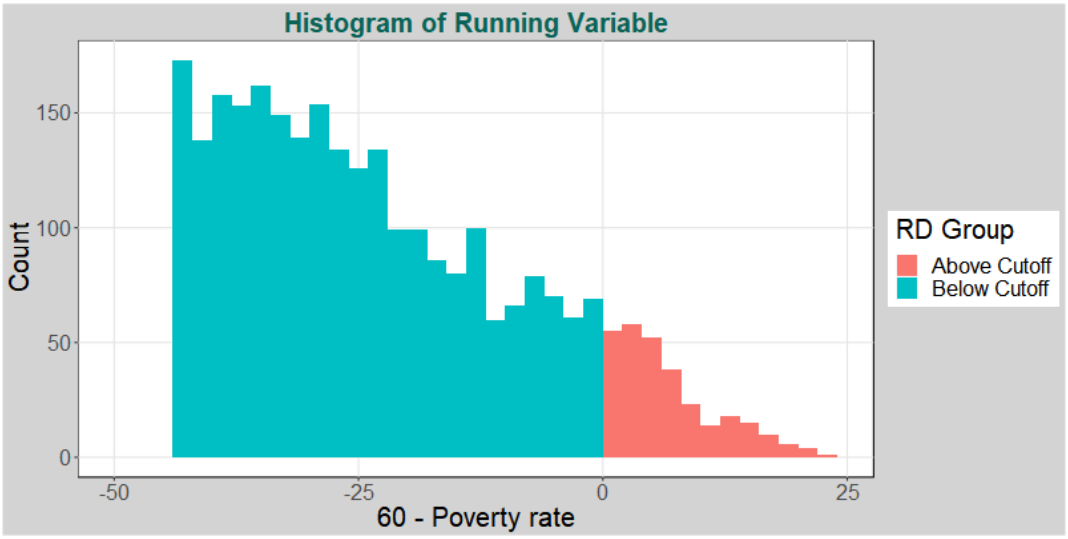








2.1.2 Q2.1.2



local binomial test

Bandwidth	Number Below Cutoff	Number Above Cutoff	binomial P Valu
0.40	6	8	0.79
0.60	9	10	1.00
0.80	12	12	1.00
1.00	18	16	0.86
1.20	20	20	1.00
1.40	24	22	0.88
1.60	28	24	0.68
1.80	32	27	0.60
2.00	35	29	0.53
2.20	43	33	0.30
2.40	44	35	0.37
2.60	51	38	0.20
2.80	53	40	0.21
3.00	53	40	0.21
3.20	54	45	0.42
3.40	58	47	0.33
3.60	62	49	0.25
3.80	64	51	0.26
4.00	69	55	0.24

2.2 Q2.2 Global and Flexible Parametric Methods

2.2.1 Q2.2.1

global polynomial fit

value	Polynomial 3	Polynomial 4	Polynomial 5	Polynomial 6
Estimate	-1.12	-1.02	-1.66	-1.75
Standard Error	0.67	0.76	0.86	0.87

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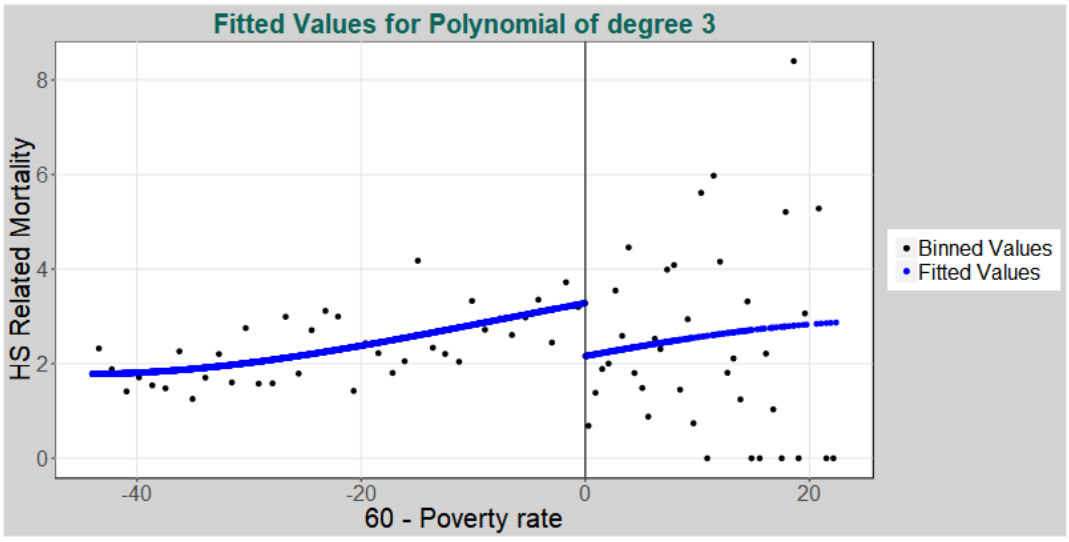
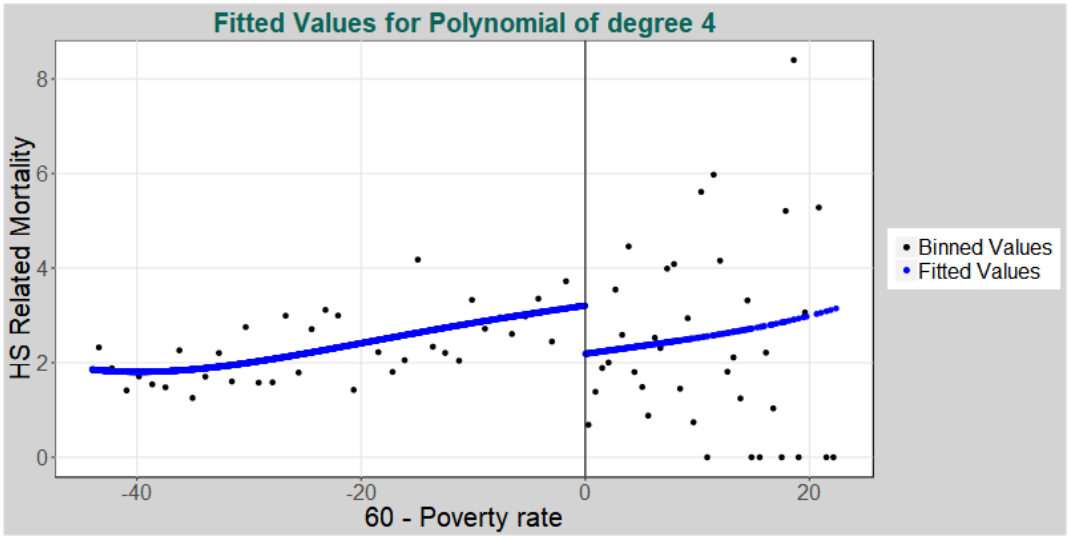
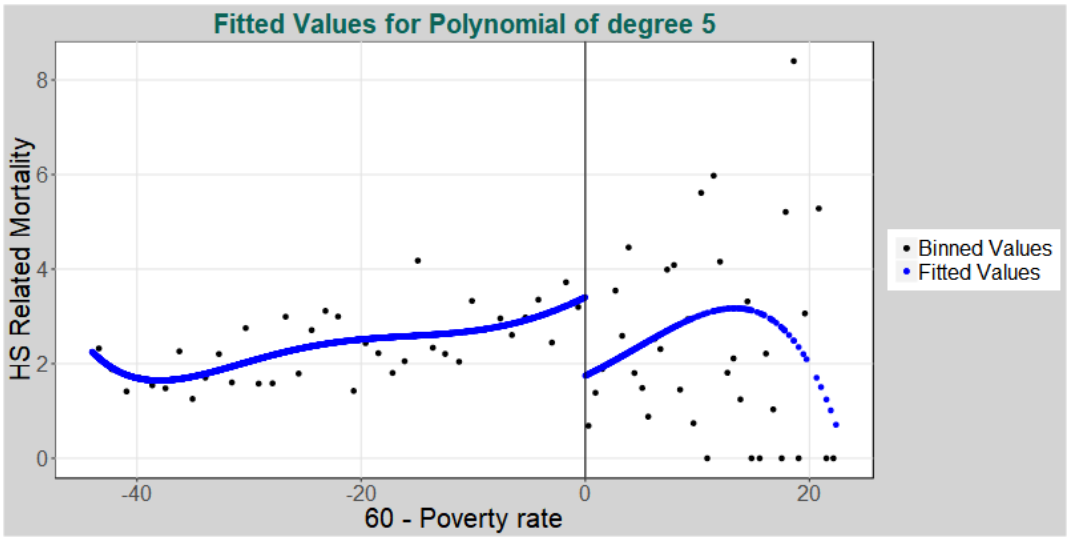
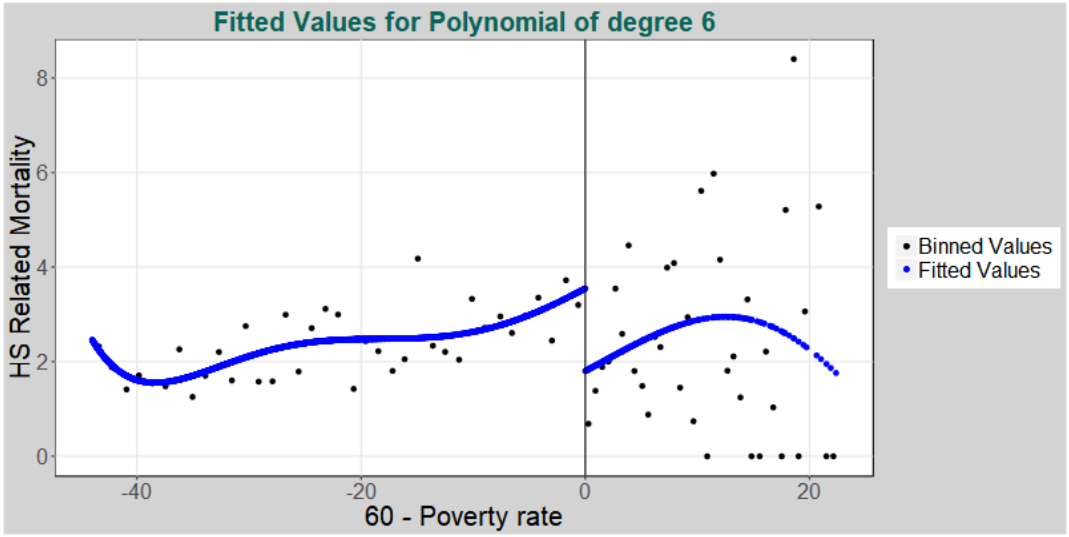

Fitted Values for Polynomial of degree 3
HS Related Mortality
60 - Poverty rate
Binned Values
Fitted Values


Fitted Values for Polynomial of degree 4
HS Related Mortality
60 - Poverty rate
Binned Values
Fitted Values


Fitted Values for Polynomial of degree 5
HS Related Mortality
60 - Poverty rate
Binned Values
Fitted Values



2.2.2 Q2.2.2

global polynomial fit, Fully Interacted

value	Polynomial 3	Polynomial 4	Polynomial 5	Polynomial 6
Estimate	-2.94	-10.70	-45.72	28.77
Standard Error	2.14	9.39	53.29	320.06

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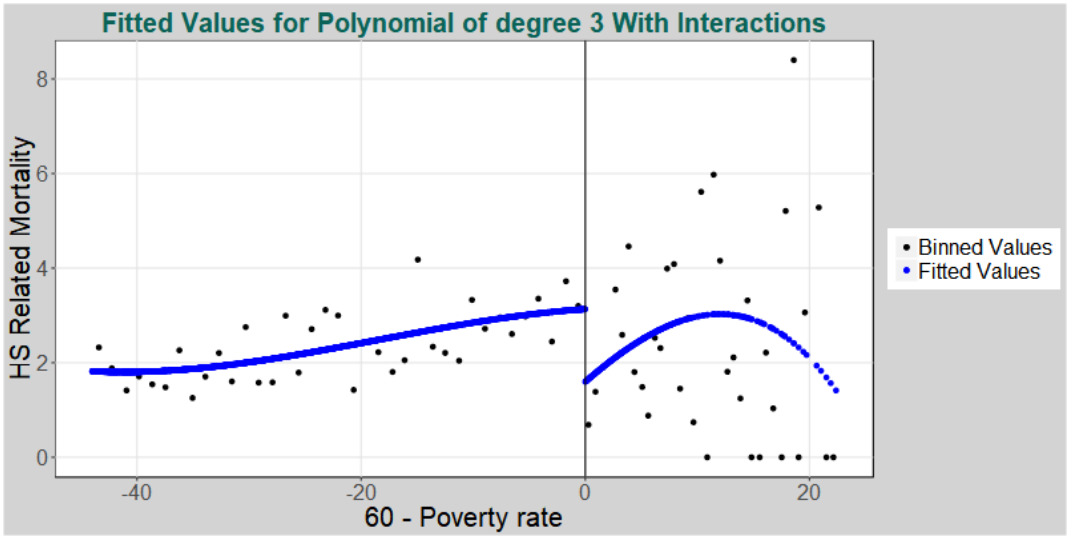
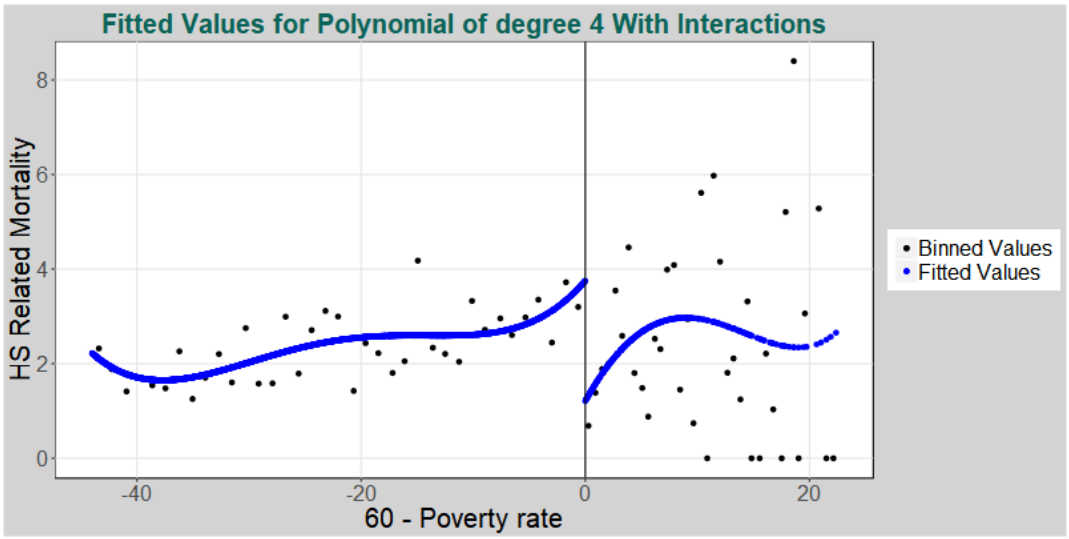
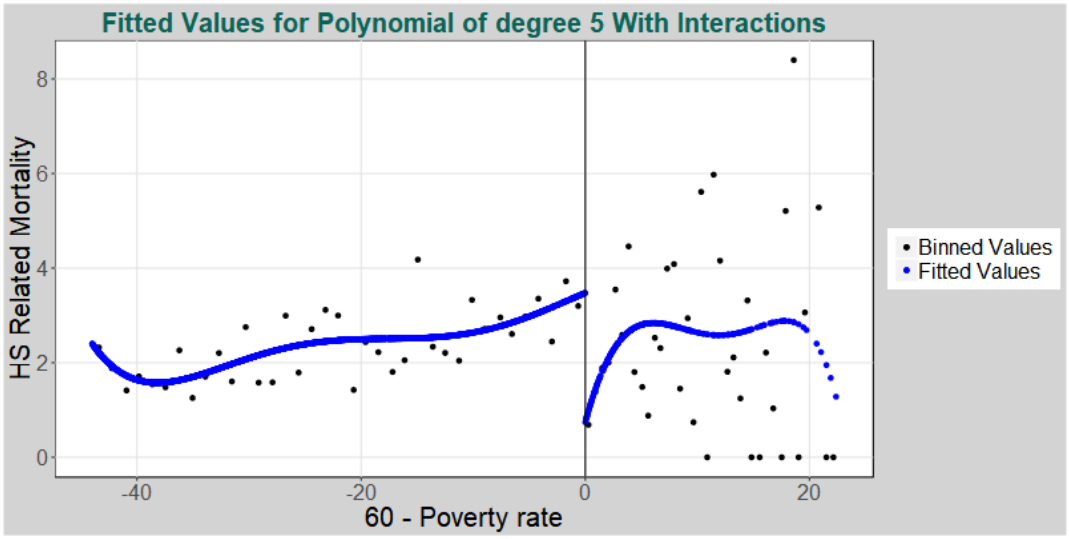
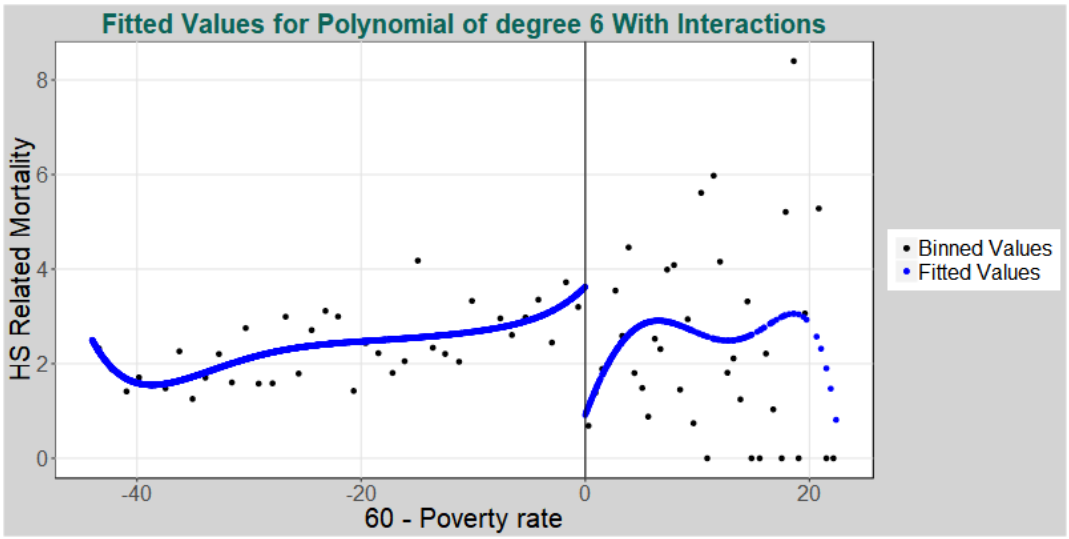



Fitted Values for Polynomial of degree 4 With Interactions
HS Related Mortality
60 - Poverty rate
Binned Values
Fitted Values


Fitted Values for Polynomial of degree 5 With Interactions
HS Related Mortality
60 - Poverty rate
Binned Values
Fitted Values

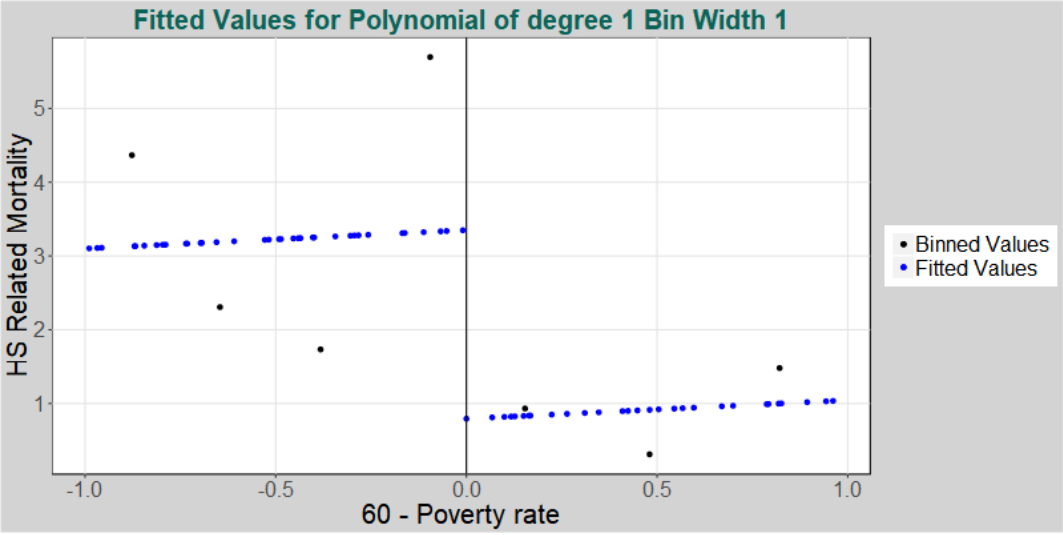

Fitted Values for Polynomial of degree 6 With Interactions
HS Related Mortality
60 - Poverty rate
Binned Values
Fitted Values

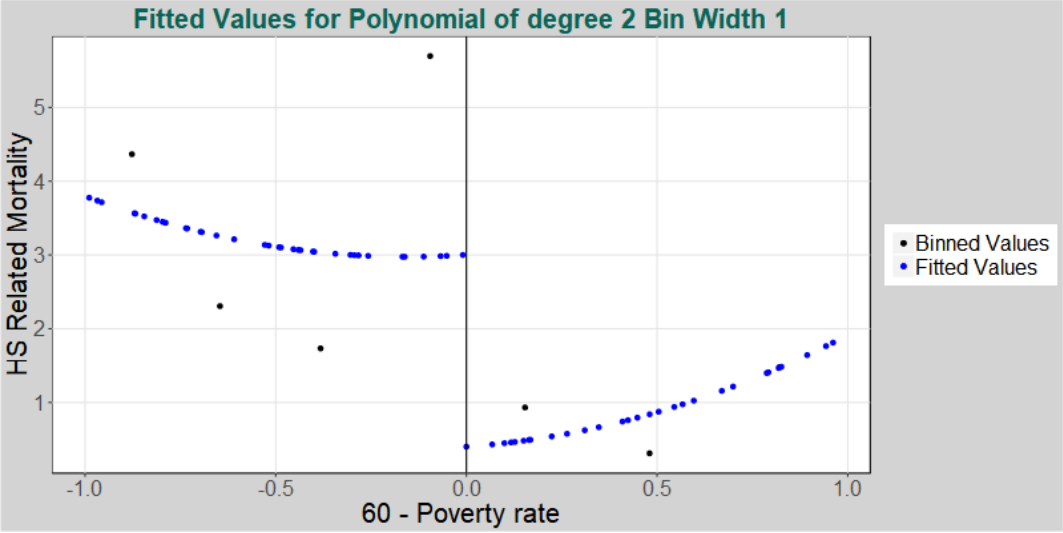
2.2.3 Q2.2.3

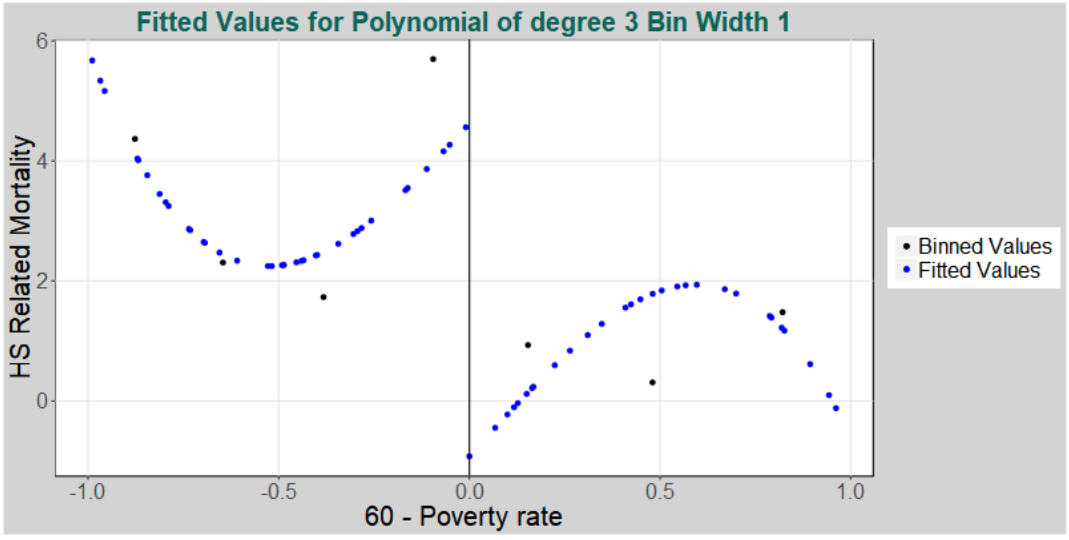
Local Parametric Model Bandwidth of 1

value	Polynomial 1	Polynomial 2	Polynomial 3
Estimate	-2.56	-2.60	-5.55
Standard Error	1.92	1.93	2.55

Graphs for Bandwidth of 1



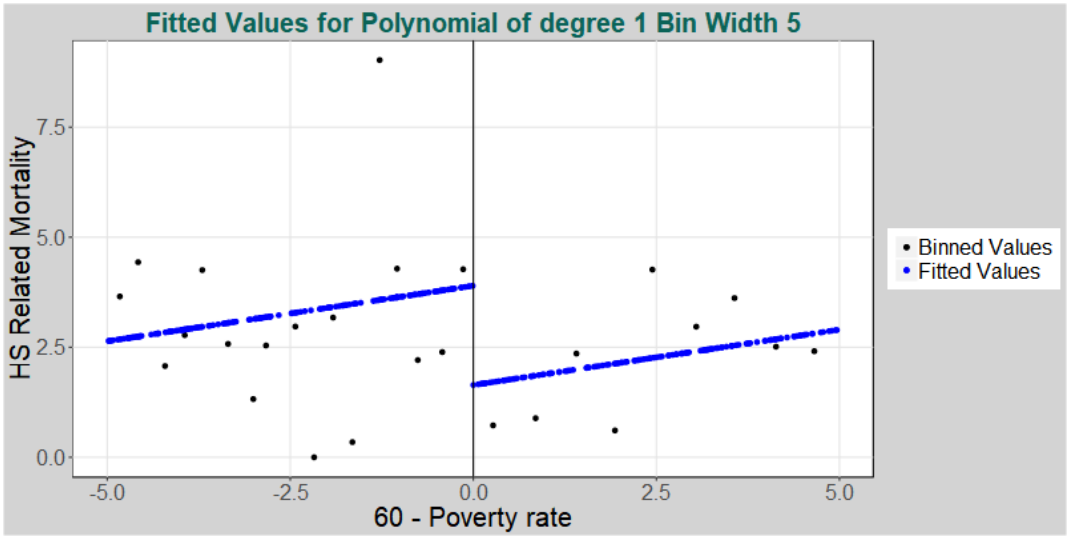


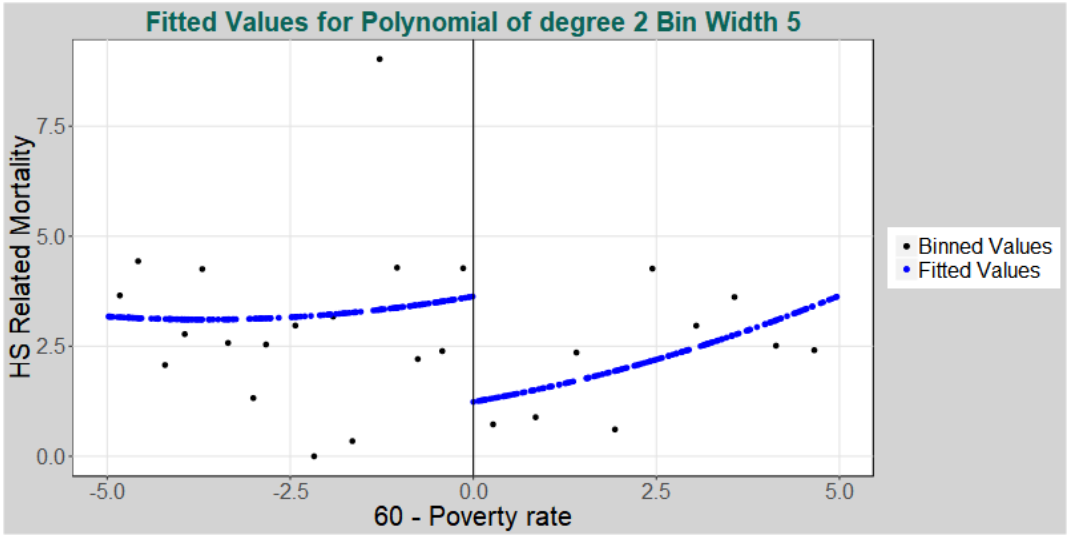


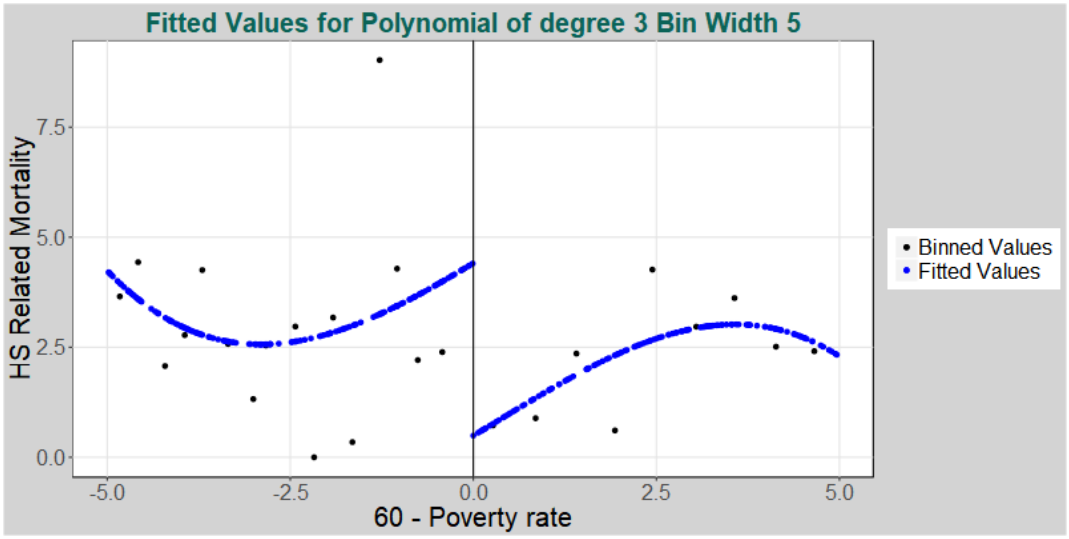
Local Parametric Model Bandwidth of 5

value	Polynomial 1	Polynomial 2	Polynomial 3
Estimate	-2.26	-2.40	-3.92
Standard Error	1.31	1.32	1.72

Graphs for Bandwidth of 5



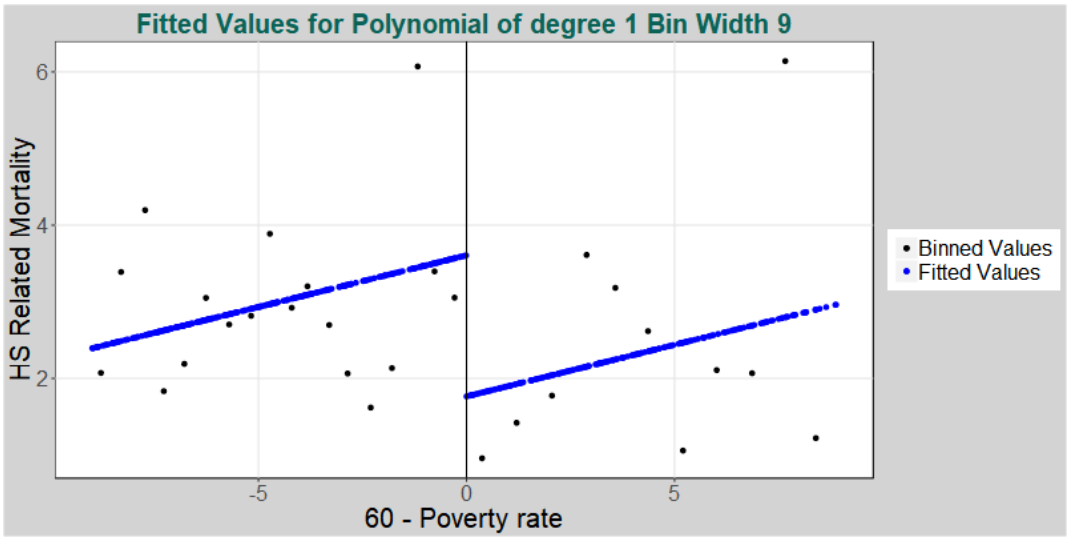


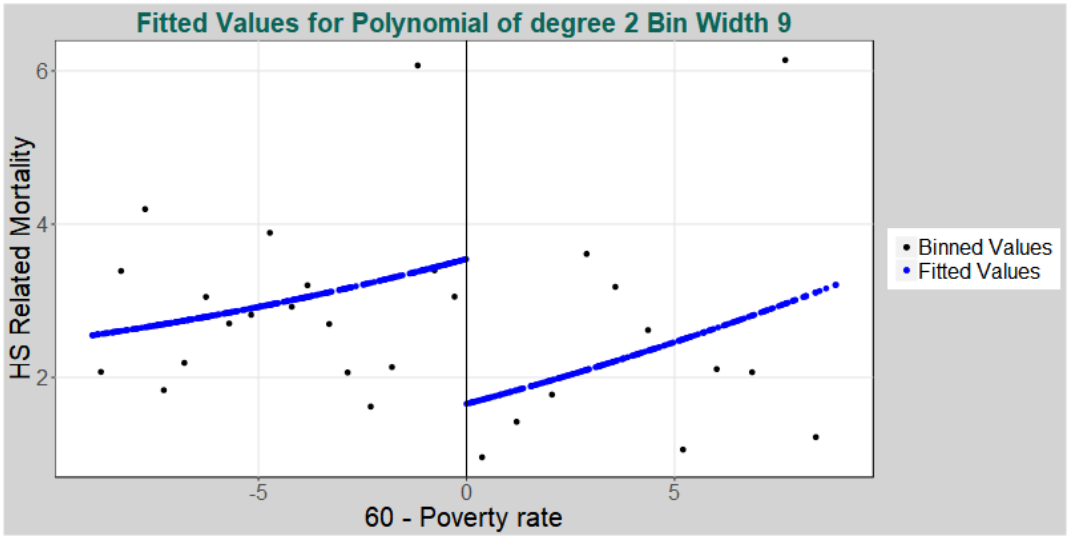


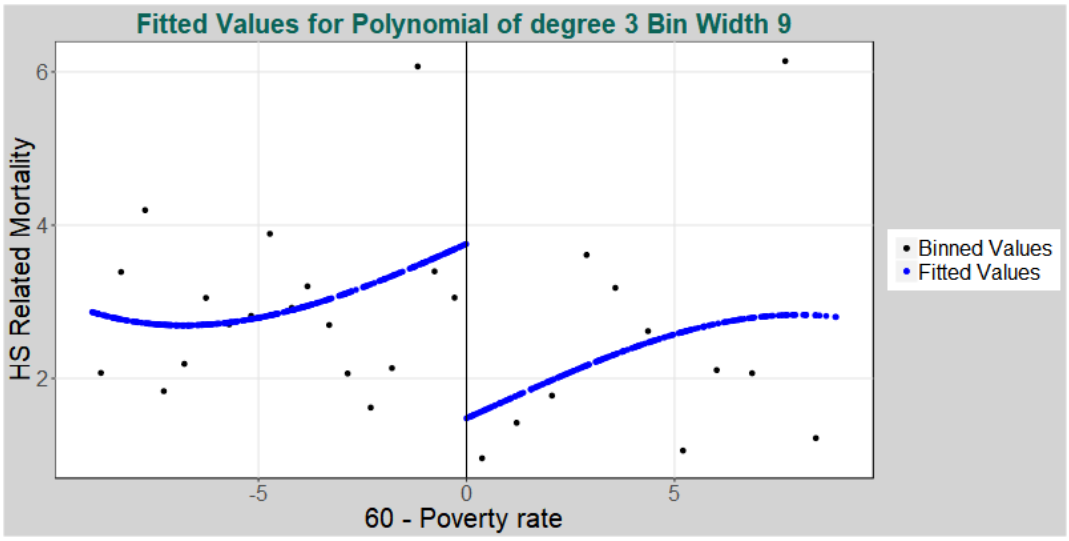
Local Parametric Model Bandwidth of 9

value	Polynomial 1	Polynomial 2	Polynomial 3
Estimate	-1.84	-1.89	-2.28
Standard Error	0.93	0.94	1.22

Graphs for Bandwidth of 9


Fitted Values for Polynomial of degree 1 Bin Width 9
HS Related Mortality
6
4
2
-5
0
5
60 - Poverty rate
Binned Values
Fitted Values


Fitted Values for Polynomial of degree 2 Bin Width 9
HS Related Mortality
6
4
2
-5
0
5
60 - Poverty rate
Binned Values
Fitted Values


Fitted Values for Polynomial of degree 3 Bin Width 9
HS Related Mortality
6
4
2
-5
0
5
60 - Poverty rate
Binned Values
Fitted Values

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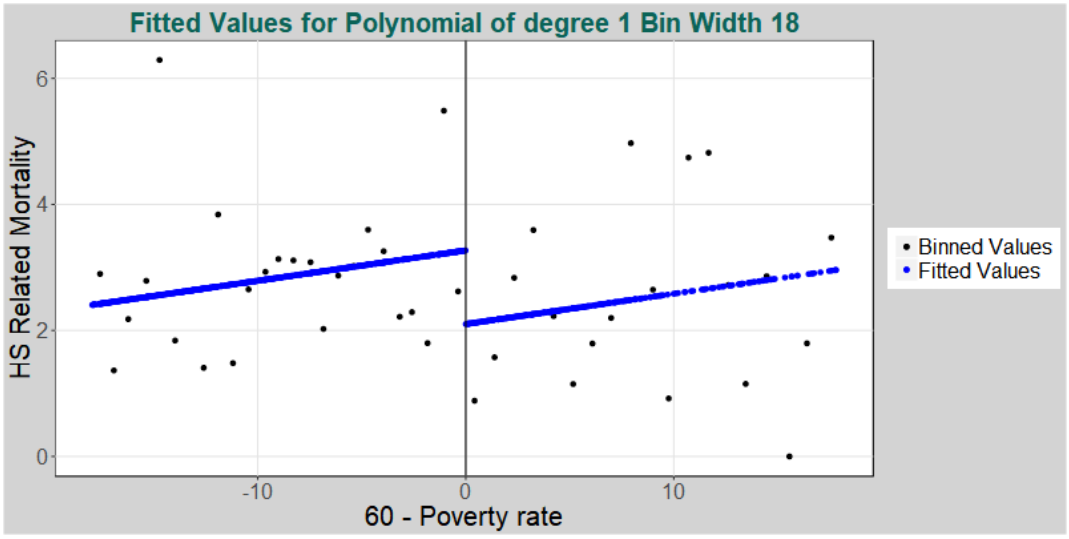
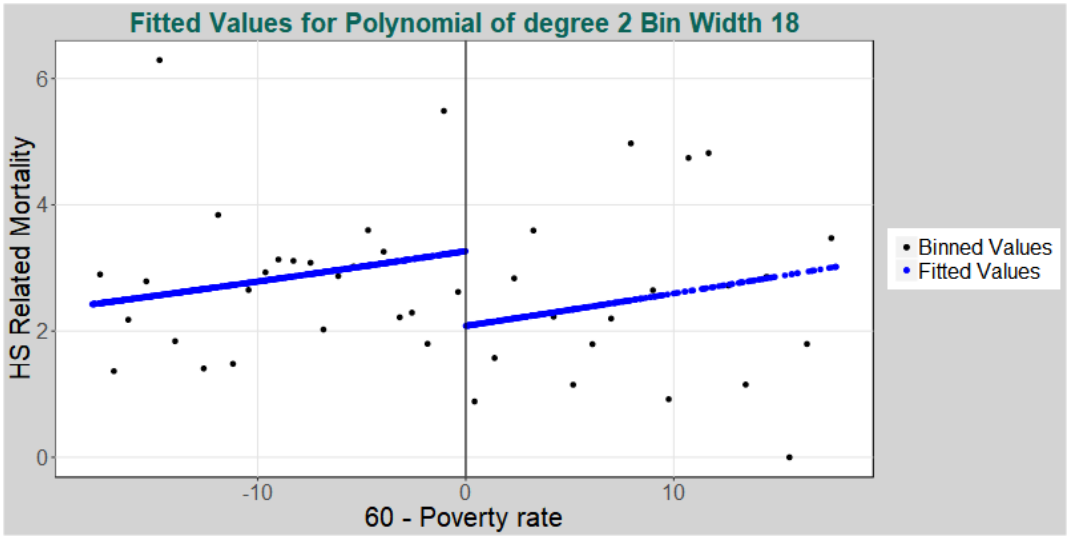
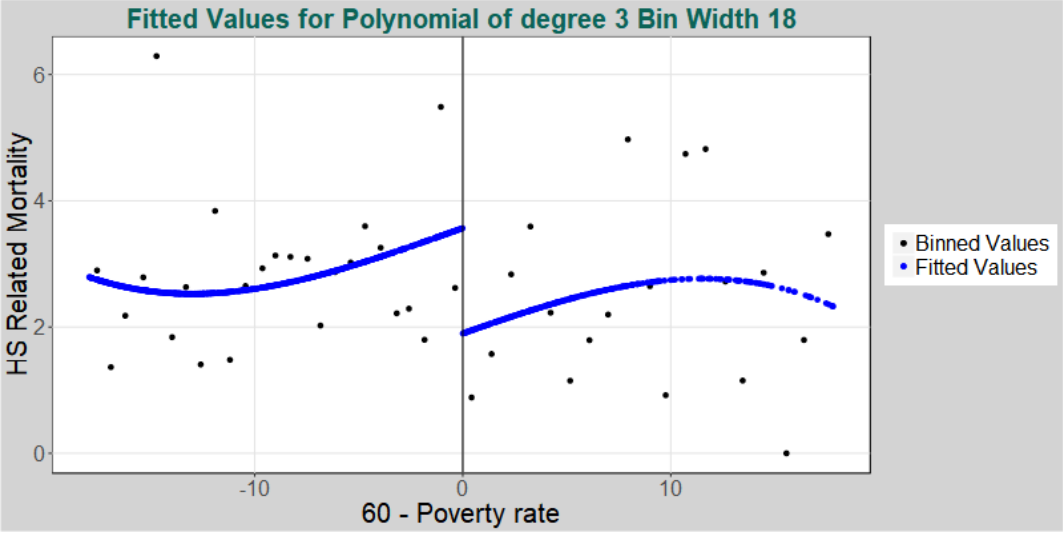
Local Parametric Model Bandwidth of 18

value	Polynomial 1	Polynomial 2	Polynomial 3
Estimate	-1.17	-1.18	-1.67
Standard Error	0.76	0.80	1.02

Graphs for Bandwidth of 18







2.2.4 Q2.2.4

2.3 Q2.3 Robust Local Polynomial Methods

2.3.1 Q2.3.1

Robust local polynomial degree 0

Estimator	Coeff	Std. Err.	CI Lower	CI Upper	polynomial
Conventional	-2.11	0.99	-4.05	-0.17	0
Bias-Corrected	-2.56	0.99	-4.50	-0.62	0
Robust	-2.56	1.23	-4.96	-0.15	0

Robust local polynomial degree 1

Estimator	Coeff	Std. Err.	CI Lower	CI Upper	polynomial
Conventional	-2.41	1.21	-4.77	-0.05	1
Bias-Corrected	-2.78	1.21	-5.14	-0.42	1
Robust	-2.78	1.37	-5.46	-0.10	1

Robust local polynomial degree 2

Estimator	Coeff	Std. Err.	CI Lower	CI Upper	polynomial
Conventional	-3.47	1.37	-6.16	-0.79	2
Bias-Corrected	-3.78	1.37	-6.46	-1.10	2
Robust	-3.78	1.45	-6.62	-0.94	2

2.3.2 Q2.3.2

(a)

Placebo Test with Mortality Related Pre-Treatment

	Coeff	Std. Err.	CI Lower	CI Upper
Conventional	-2.38	2.25	-6.78	2.03
Bias-Corrected	-1.77	2.25	-6.17	2.64
Robust	-1.77	2.68	-7.01	3.48

Placebo Test with Mortality Injury Post-Treatment

	Coeff	Std. Err.	CI Lower	CI Upper
Conventional	1.13	3.77	-6.26	8.53
Bias-Corrected	1.52	3.77	-5.87	8.92
Robust	1.52	4.39	-7.07	10.12

(b)

Bandwidth and Kernal Robustness Check

	kernal	Bw = 1	Bw = 2	Bw = 3	Bw = 4	Bw = 5	Bw = 6	Bw = 7	Bw = 8	Bw = 9	Bw = 10
1	epanechnikov	-4.97	-2.61	-1.86	-3.03	-3.85	-4.04	-3.69	-3.17	-2.87	-2.78
2	triangular	-4.72	-3.07	-2.04	-2.85	-3.59	-3.86	-3.67	-3.29	-3.04	-2.92
3	uniform	-5.79	-1.82	-2.28	-3.83	-4.21	-3.94	-3.10	-2.33	-2.62	-2.75

(c)

Donut Hole Robustness Check

	# obs dropped	1	2	3	4	5	6	7	8	9	10
1	estimate	-2.73	-2.86	-2.58	-3.02	-2.92	-2.73	-2.56	-2.73	-2.73	-2.73

(d)

Placebo Cutoff Robustness Check

	Statistic	c = -10	c = -8	c = -6	c = -4	c = -2	c = 0	c = 2	c = 4	c = 6	c = 8	c = 10
1	Estimate	0.55	-0.26	0.40	-0.09	2.24	-2.78	3.13	-1.53	1.64	-5.80	4.18
2	p Value	0.49	0.78	0.64	0.93	0.17	0.02	0.02	0.27	0.13	0.06	0.28

2.3.3 Q2.3.3

2.4 Q 2.4 Local Randomization Methods

Neynman's approach

	Statistic	w = 0.8	w = 1	w = 1.2	w = 1.4	w = 1.6	w = 1.8	w = 2	w = 2.2	w = 2.4	w = 2.6
1	Estimate	-0.63	-1.69	-1.28	-2.01	-1.65	-1.08	-0.91	-0.81	-0.45	-0.30
2	P-Value	0.59	0.05	0.05	0.04	0.05	0.11	0.09	0.09	0.29	0.42
3	Std Error	1.15	0.86	0.64	0.96	0.84	0.67	0.54	0.47	0.42	0.37