

Table S1. Partial and overall ranks of all estimation methods for various combinations of θ .

θ^T	n	<i>WLSE</i>	<i>OLSE</i>	<i>MLE</i>	<i>MPSE</i>	<i>CVME</i>	<i>ADE</i>	<i>RADE</i>	<i>PCE</i>
$(\eta = -0.50, \zeta = 0.50, \theta = 0.40)$	50	3	4	7	6	8	1	2	5
	80	3	4	7	6	8	2	1	5
	120	3	4	7	6	8	1	2	5
	200	3	4	7	5	8	1	2	6
	300	2	4	7	5.5	8	1	3	5.5
$(\eta = -0.50, \zeta = 0.50, \theta = 1.60)$	50	2	5	3.5	7	8	1	3.5	6
	80	2	5	3	7	8	1	4	6
	120	2	4	3	7	8	1	5	6
	200	2	4.5	3	6.5	8	1	6.5	4.5
	300	2	4	3	7	8	1	6	5
$(\eta = -0.50, \zeta = 0.50, \theta = 2.75)$	50	4	5	2	3	8	1	6	7
	80	2	6.5	3	4	8	1	5	6.5
	120	2	7	3	4	8	1	5.5	5.5
	200	2	6	3.5	3.5	8	1	7	5
	300	2	7	3.5	3.5	8	1	6	5
$(\eta = -0.50, \zeta = 1.75, \theta = 0.40)$	50	3	4.5	7	6	8	2	1	4.5
	80	3	4.5	7	6	8	1	2	4.5
	120	3	5	7	6	8	2	1	4
	200	3	5	7	6	8	1	2	4
	300	3	5	7	6	8	1	2	4
$(\eta = -0.50, \zeta = 1.75, \theta = 1.60)$	50	3	4	6.5	6.5	8	1	2	5
	80	2.5	5	6.5	6.5	8	1	2.5	4
	120	1	5	7	6	8	2	3	4
	200	2	5	7	6	8	1	3	4
	300	1.5	5	6	7	8	1.5	3	4
$(\eta = -0.50, \zeta = 1.75, \theta = 2.75)$	50	3	5	6	7	8	1	2	4
	80	2.5	5	6	7	8	1	2.5	4
	120	2	5.5	5.5	7	8	1	3	4
	200	2	5.5	5.5	7	8	1	3	4
	300	2	5.5	5.5	7	8	1	3	4

$(\eta = -0.50, \zeta = 3.00, \theta = 0.40)$	50	3	4	7	6	8	2	1	5
	80	3	5	7	6	8	2	1	4
	120	3	4	7	6	8	2	1	5
	200	3	5	7	6	8	1.5	1.5	4
	300	2	6	7	5	8	3	1	4
$(\eta = -0.50, \zeta = 3.00, \theta = 1.60)$	50	3	4.5	7	6	8	1	2	4.5
	80	2	4	7	6	8	1	3	5
	120	3	5	7	6	8	1	2	4
	200	2	5	7	6	8	1	3	4
	300	1	5	7	6	8	2	3	4
$(\eta = -0.50, \zeta = 3.00, \theta = 2.75)$	50	3	4	6	7	8	1	2	5
	80	3	5	6.5	6.5	8	1	2	4
	120	3	5	7	6	8	1	2	4
	200	1	5	7	6	8	2	3	4
	300	2	5	7	6	8	1	3	4
$(\eta = 0.75, \zeta = 0.50, \theta = 0.40)$	50	3	4	5	6.5	8	1	2	6.5
	80	2	4	5	6.5	8	1	3	6.5
	120	3	4	5	6	8	1	2	7
	200	2	4	5	6	8	1	3	7
	300	1.5	5	6	4	8	1.5	3	7
$(\eta = 0.75, \zeta = 0.50, \theta = 1.60)$	50	3	6.5	2	6.5	8	1	4	5
	80	3	4.5	2	6	8	1	4.5	7
	120	2	6	3	5	8	1	7	4
	200	3	6	2	5	8	1	7	4
	300	2.5	6	2.5	4.5	8	1	7	4.5

Table S1. Partial and overall ranks of all estimation methods for various combinations of θ (continued).

θ^T	n	WLSE	OLSE	MLE	MPSE	CVME	ADE	RADE	PCE
$(\eta = 0.75, \zeta = 0.50, \theta = 2.75)$	50	4	7	2	3	8	1	5	6
	80	4	6	2	3	8	1	7	5
	120	4	6	2	3	8	1	7	5
	200	4	6	2	3	8	1	7	5

	300	4.5	6	1	2.5	8	2.5	7	4.5
	50	3	4	5	6	8	2	1	7
	80	3	4	7	5	8	2	1	6
$(\eta = 0.75, \zeta = 1.75, \theta = 0.40)$	120	3	4	7	5	8	2	1	6
	200	3	4	7	5	8	2	1	6
	300	3	4	7	5	8	2	1	6
	50	3	4	6	7	8	1	2	5
	80	3	4	7	6	8	1	2	5
$(\eta = 0.75, \zeta = 1.75, \theta = 1.60)$	120	3	4.5	7	6	8	1	2	4.5
	200	2	4	7	6	8	1	3	5
	300	2	4	7	5.5	8	1	3	5.5
	50	3	4	6	7	8	1	2	5
	80	2	4	5.5	7	8	1	3	5.5
$(\eta = 0.75, \zeta = 1.75, \theta = 2.75)$	120	2	5	6	7	8	1	3	4
	200	2	5.5	7	5.5	8	1	3	4
	300	1	5	7	6	8	2	3	4
	50	3	4	5	6	8	2	1	7
	80	3	4	6	5	8	2	1	7
$(\eta = 0.75, \zeta = 3.00, \theta = 0.40)$	120	3	4	6	5	8	2	1	7
	200	3	4	7	5	8	2	1	6
	300	3	5	7	4	8	2	1	6
	50	3	4	7	5	8	1	2	6
	80	2.5	4	7	5.5	8	1	2.5	5.5
$(\eta = 0.75, \zeta = 3.00, \theta = 1.60)$	120	2.5	4	7	5.5	8	1	2.5	5.5
	200	1	5	7	6	8	2	3	4
	300	2	5	7	5	8	1	3	5
	50	3	4	7	6	8	1	2	5
	80	2.5	4	7	6	8	1	2.5	5
$(\eta = 0.75, \zeta = 3.00, \theta = 2.75)$	120	1	5	7	6	8	3	2	4
	200	1	6	7	5	8	2	3	4
	300	2	6	7	4	8	1	3	5
	50	3	4	5	6	8	1	2	7
	80	3	4	5	6	8	1	2	7

$(\eta = 1.50, \zeta = 0.50, \theta = 0.40)$	120	2	4	5.5	5.5	8	1	3	7
	200	2	4	6	5	8	1	3	7
	300	1	5	6	4	8	2	3	7
$(\eta = 1.50, \zeta = 0.50, \theta = 1.60)$	50	3	7	2	6	8	1	4	5
	80	3	5	2	4	8	1	7	6
	120	3	6	2	4.5	8	1	7	4.5
$(\eta = 1.50, \zeta = 0.50, \theta = 2.75)$	200	3	6	2	5	8	1	7	4
	300	2	6	3	4	8	1	7	5
	50	5	6	2	3	8	1	7	4
$(\eta = 1.50, \zeta = 1.75, \theta = 0.40)$	80	4	6	2	3	8	1	7	5
	120	4	6	2	3	8	1	7	5
	200	5	6	3	1.5	8	1.5	7	4
$(\eta = 1.50, \zeta = 1.75, \theta = 1.60)$	300	5	6	3	1	8	2	7	4
	50	3	4	5	6	8	2	1	7
	80	3	4	6	5	8	2	1	7
$(\eta = 1.50, \zeta = 1.75, \theta = 2.75)$	120	3	4	7	5	8	2	1	6
	200	3	4	7	5	8	2	1	6
	300	3	5	7	4	8	2	1	6

Table S1. Partial and overall ranks of all estimation methods for various combinations of θ (continued).

θ^T	n	$WLSE$	$OLSE$	MLE	$MPSE$	$CVME$	ADE	$RADE$	PCE
$(\eta = 1.50, \zeta = 1.75, \theta = 1.60)$	50	3	4	7	6	8	1	2	5
	80	3	4	7	6	8	1	2	5
	120	1	4	7	5	8	2	3	6
	200	2	5	7	4	8	1	3	6
	300	2	5	7	4	8	1	3	6
$(\eta = 1.50, \zeta = 1.75, \theta = 2.75)$	50	3	4	6	7	8	1	2	5
	80	3	4	6	7	8	1	2	5
	120	2	4	6	6	8	1	3	6
	200	2	5	7	4	8	1	3	6
	300	1	4.5	7	4.5	8	2	3	6
	50	3	4	5	6	8	1	2	7

$(\eta = 1.50, \zeta = 3.00, \theta = 0.40)$	80	3	4	6	5	8	2	1	7
	120	3	4.5	6	4.5	8	2	1	7
	200	3	4	6.5	5	8	2	1	6.5
	300	3	5	7	4	8	1	2	6
$(\eta = 1.50, \zeta = 3.00, \theta = 1.60)$	50	3	4	7	5.5	8	1	2	5.5
	80	3	4	7	6	8	1	2	5
	120	3	4	7	5.5	8	1	2	5.5
	200	1	4	7	5	8	2	3	6
	300	3	5.5	7	4	8	1	2	5.5
$(\eta = 1.50, \zeta = 3.00, \theta = 2.75)$	50	3	4	7	6	8	1	2	5
	80	3	4	7	6	8	1	2	5
	120	2	4.5	7	6	8	1	3	4.5
	200	2	6	7	4	8	1	3	5
	300	1.5	6	7	4	8	1.5	3	5
$(\eta = 4.00, \zeta = 0.50, \theta = 0.40)$	50	3	4.5	6	4.5	8	1	2	7
	80	2.5	5	6	4	8	1	2.5	7
	120	3	5	6	4	8	1	2	7
	200	2	5	6	4	8	1	3	7
	300	1	5	6	4	8	2	3	7
$(\eta = 4.00, \zeta = 0.50, \theta = 1.60)$	50	3	7	2	5.5	8	1	4	5.5
	80	2	5	3	4	8	1	6	7
	120	3	5	2	4	8	1	7	6
	200	4	5	2	3	8	1	7	6
	300	1	5	4	2	8	3	7	6
$(\eta = 4.00, \zeta = 0.50, \theta = 2.75)$	50	5	4	2	3	8	1	7	6
	80	4	6	3	2	8	1	7	5
	120	4.5	6	3	2	8	1	7	4.5
	200	5	6	3	1.5	8	1.5	7	4
	300	5	6	3	1	8	2	7	4
$(\eta = 4.00, \zeta = 1.75, \theta = 0.40)$	50	3	5	6	4	8	2	1	7
	80	3	5	6	4	8	2	1	7
	120	3	5	6	4	8	2	1	7
	200	3	5	6	4	8	2	1	7

	300	3	5	7	4	8	2	1	6
	50	3	4	5	6	8	1	2	7
	80	3	4	7	5	8	1	2	6
$(\eta = 4.00, \zeta = 1.75, \theta = 1.60)$	120	2	5	7	4	8	1	3	6
	200	2	5	7	4	8	1	3	6
	300	3	5	7	4	8	1	2	6
	50	3	5	6	4	8	1	2	7
	80	2.5	6	5	4	8	1	2.5	7
$(\eta = 4.00, \zeta = 1.75, \theta = 2.75)$	120	2	5	7	4	8	1	3	6
	200	2	5.5	7	4	8	1	3	5.5
	300	2	5.5	7	4	8	1	3	5.5

Table S1. Partial and overall ranks of all estimation methods for various combinations of θ (continued).

θ^T	n	WLSE	OLSE	MLE	MPSE	CVME	ADE	RADE	PCE
	50	3	6	5	4	7	2	1	8
	80	3	5	6	4	8	2	1	7
$(\eta = 4.00, \zeta = 3.00, \theta = 0.40)$	120	3	5	6	4	8	1	2	7
	200	2	5	6	4	8	3	1	7
	300	3	5	6	2	8	4	1	7
	50	3	4	6	5	8	1	2	7
	80	3	5	7	4	8	1	2	6
$(\eta = 4.00, \zeta = 3.00, \theta = 1.60)$	120	3	5	7	4	8	1	2	6
	200	2	5	7	4	8	1	3	6
	300	2	6	7	3	8	1	4	5
	50	2.5	4.5	6.5	4.5	8	1	2.5	6.5
	80	3	5	7	4	8	1	2	6
$(\eta = 4.00, \zeta = 3.00, \theta = 2.75)$	120	2	5.5	7	4	8	1	3	5.5
	200	1	6	7	4	8	2	3	5
	300	2	6	7	4	8	1	3	5
$\sum Ranks$		478	878.5	1012	893.5	1439	240.5	550.5	988
<i>Overall Rank</i>		2	4	7	5	8	1	3	6