Table 1: Power analysis for UFDM, DCOR, HSIC, and MEF across varying dimensions (d) and distributions ($n = 375, \alpha = 0.05$).

X Dist.	Relationship	d	UFDM	DCOR	HSIC	MEF
Uniform	Linear(1.0)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Linear(0.3)	5	0.99 [0.95, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.99 [0.95, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Logarithmic	5	0.98 [0.93, 0.99]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Quadratic	5	0.99 [0.95, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Polynomial	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	LRSO(0.05)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	0.88 [0.80, 0.93]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Cond. Var.	5	0.98 [0.93, 0.99]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.97 [0.92, 0.99]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
Gaussian	Linear(1.0)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Linear(0.3)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Logarithmic	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	0.99 [0.95, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.61 [0.51, 0.70]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Quadratic	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.79 [0.70, 0.86]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Polynomial	5	0.98 [0.93, 0.99]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	LRSO(0.05)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	0.85 [0.77, 0.91]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Cond. Var.	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]

Table 1 – continued from previous page

X Dist.	Relationship	d	UFDM	DCOR	HSIC	MEF
	Linear(1.0)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Linear(0.3)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Logarithmic	5	0.98 [0.93, 0.99]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	0.86 [0.78, 0.91]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.72 [0.63, 0.80]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
Student t	Quadratic	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	0.89 [0.81, 0.94]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.83 [0.74, 0.89]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Polynomial	5	0.87 [0.79, 0.92]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	0.97 [0.92, 0.99]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.92 [0.85, 0.96]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	LRSO(0.05)	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	0.84 [0.76, 0.90]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Cond. Var.	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Mixture Bimodal Marginal	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Mixture Bimodal	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Circular	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	0.99 [0.95, 1.00]	0.98 [0.93, 0.99]	0.99 [0.95, 1.00]	0.49 [0.39, 0.59]
		25	0.49 [0.39, 0.59]	0.76 [0.67, 0.83]	0.80 [0.71, 0.87]	0.30 [0.22, 0.40]
Complex	Gauss Cop.	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.99 [0.95, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Clayton Cop.	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		25	0.99 [0.95, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
	Interleaved Moons	5	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]	1.00 [0.96, 1.00]
		15	0.98 [0.93, 0.99]	0.92 [0.85, 0.96]	0.92 [0.85, 0.96]	0.24 [0.17, 0.33]
		25	0.85 [0.77, 0.91]	0.52 [0.42, 0.62]	0.55 [0.45, 0.64]	0.09 [0.05, 0.16]