

526 **Appendix: supplementary material**

527 **7 Detail computational results**

528 Tables 6 - 10 presents a comparison between the proposed
529 LNS and the CMSA on a variety of benchmark instances. The
530 table provide the results for each algorithm in terms of the
531 minimum cost f_{\min} , average cost f_{avg} , and improvement in
532 percentage. The instances are represented by their parameters
533 (n, m, k) , which refer to the size and configuration of each
534 benchmark instance. The improvement is calculated based on
535 the difference in performance between the two algorithms.

536 Tables 11 - 14 compare the proposed LNS against mul-
537 tiple metaheuristics: MA, VNS, and CMSA. These table is
538 based on all other set of benchmark instances. For each algo-
539 rithm, the table provides the f_{\min} and average cost f_{avg} . Since
540 CMSA is currently the best performing metaheuristic algo-
541 rithm for MMNPP, we provide the percentage improvement
542 of LNS over CMSA in terms of the objective function value
543 in the last column of the table.

Table 6: Comparison between LNS and CMSA on all benchmark instances (Benchmark set A)

Ins.	(n, m, k)	CMSA		our LNS			Improvement	
		\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	$\bar{t}(s)$	\bar{f}_{min}	\bar{f}_{avg}
1	(50,2,5)	294.85	458.54	234.26	338.58	1090.21	20.55%	26.16%
2	(50,5,5)	12974.75	14999.21	9848.17	12471.75	1055.20	24.10%	16.85%
3	(50,10,5)	51399.53	53225.28	42785.16	45894.34	633.62	16.76%	13.77%
4	(50,20,5)	98444.57	103299.49	91302.56	95046.7	704.86	7.25%	7.99%
5	(50,2,10)	3366.89	3996.26	2223.88	2682.48	851.39	33.95%	32.88%
6	(50,5,10)	33289.62	34747.88	25681.99	27118.34	773.66	22.85%	21.96%
7	(50,10,10)	65972.11	70536.97	60469.86	64058.23	1009.41	8.34%	9.18%
8	(50,20,10)	109470.1	114740.04	102855.87	106362.72	1099.75	6.04%	7.30%
9	(50,2,20)	17069.34	17151.06	12343.78	12343.78	368.89	27.68%	28.03%
10	(50,5,20)	61205.94	61820.11	61199.46	62300.31	818.89	0.01%	-0.78%
11	(50,10,20)	92308.56	94080.31	96735.78	98348.11	865.96	-4.80%	-4.54%
12	(50,20,20)	127834.22	129265.79	124955.91	127644.79	1252.57	2.25%	1.25%
13	(100,2,5)	50.55	78.27	27.62	74.99	1556.19	45.37%	4.18%
14	(100,5,5)	5444.88	8013.43	6791.45	8746.02	1445.37	-24.73%	-9.14%
15	(100,10,5)	37770.65	42169.27	34550.74	39125.26	1238.94	8.52%	7.22%
16	(100,20,5)	92352.47	92957.15	87700.82	89776.19	713.78	5.04%	3.42%
17	(100,2,10)	1616.01	1926.61	531.63	796.19	1370.70	67.10%	58.67%
18	(100,5,10)	24439.21	26225.34	18922.63	20636.5	1466.52	22.57%	21.31%
19	(100,10,10)	63435.93	67685.66	53626.62	59431.65	1294.05	15.46%	12.19%
20	(100,20,10)	117305.31	120362.8	108301.13	112139.33	837.05	7.68%	6.83%
21	(100,2,20)	5117.89	5797.95	2577.08	3303.21	1434.05	49.65%	43.03%
22	(100,5,20)	37700.29	39782.24	30977.84	34027.43	1363.78	17.83%	14.47%
23	(100,10,20)	79934.36	79967.17	73924.25	76321.54	1193.30	7.52%	4.56%
24	(100,20,20)	125657.42	127796.1	118053.59	122705.34	1050.01	6.05%	3.98%
25	(500,2,5)	147.61	183.01	68.34	91.37	1181.77	53.70%	50.07%
26	(500,5,5)	9284.33	9708.58	5908.32	7155.97	1229.68	36.36%	26.29%
27	(500,10,5)	35423.97	35720.59	30778.2	32850.72	850.62	13.11%	8.03%
28	(500,20,5)	86328.01	87447.88	77249.02	80708.49	759.99	10.52%	7.71%
29	(500,2,10)	490.93	564.7	360.16	424.12	1216.01	26.64%	24.90%
30	(500,5,10)	14677.62	15084.17	12530.2	13418.41	706.39	14.63%	11.04%
31	(500,10,10)	49047.65	51929.08	46309.03	48267.42	822.30	5.58%	7.05%
32	(500,20,10)	113147.89	115095.43	104520.96	107958.51	1081.48	7.62%	6.20%
33	(500,2,20)	1261.53	1261.53	1060.56	1116.87	1194.81	15.93%	11.47%
34	(500,5,20)	23087.41	23284.92	18384.31	20654.81	1078.82	20.37%	11.30%
35	(500,10,20)	64953.26	67698.03	61019.37	63660.49	1017.11	6.06%	5.96%
36	(500,20,20)	136291.8	139669.26	125526.86	129674.98	1078.99	7.90%	7.16%
#Best							34	33

Table 7: Comparison between LNS and CMSA on all benchmark instances (Benchmark set B)

Ins.	(n, m, k)	CMSA		our LNS			Improvement	
		\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	$\bar{t}(s)$	\bar{f}_{min}	\bar{f}_{avg}
1	(50,2,5)	269.78	426.77	224.85	373.5	913.87	16.66%	12.48%
2	(50,5,5)	12529.99	16590.89	11715.24	14455.8	864.34	6.50%	12.87%
3	(50,10,5)	50035.27	52259.75	42567.06	49320.6	776.35	14.93%	5.62%
4	(50,20,5)	99633.6	102202.35	90165.29	98506.82	412.42	9.50%	3.62%
5	(50,2,10)	3165.56	4728.01	2006.52	2710.39	938.29	36.61%	42.67%
6	(50,5,10)	36285.8	38813.85	27023.58	30291.2	420.26	25.53%	21.96%
7	(50,10,10)	71384.18	74239.12	66004.84	69362.44	423.59	7.54%	6.57%
8	(50,20,10)	114676.85	117931.57	109155.67	113069.99	1090.88	4.81%	4.12%
9	(50,2,20)	17659.29	17746.41	16545.15	16580.43	211.26	6.31%	6.57%
10	(50,5,20)	66794.1	67979.34	62429.31	63384.39	198.37	6.53%	6.76%
11	(50,10,20)	100390.1	101963.47	100749.01	102072.86	836.17	-0.36%	-0.11%
12	(50,20,20)	134024.96	136016.19	133416.51	134531.06	739.19	0.45%	1.09%
13	(100,2,5)	64.93	92.49	81.19	113.37	1172.12	-25.05%	-22.58%
14	(100,5,5)	6157.09	7645.42	6823.14	9290.02	920.06	-10.82%	-21.51%
15	(100,10,5)	39490.32	40189.03	36725.57	39305.89	1124.99	7.00%	2.20%
16	(100,20,5)	91628.39	93946.31	89018.19	92832.36	535.26	2.85%	1.19%
17	(100,2,10)	964.07	1126.72	772.54	1015.56	1266.88	19.87%	9.87%
18	(100,5,10)	23247.75	24614.24	20662.86	22171.56	988.45	11.12%	9.92%
19	(100,10,10)	59052	65073.34	57088.35	61472.02	745.44	-2.48%	5.82%
20	(100,20,10)	116541.41	119791.85	108957.81	114116.43	1229.96	6.51%	4.74%
21	(100,2,20)	4828.95	5358.54	3470.58	4039.03	1163.53	28.13%	24.62%
22	(100,5,20)	36975.48	38335.13	34499.7	36601.35	1006.88	6.70%	4.52%
23	(100,10,20)	78302.45	81035.58	73684.7	76998.15	1152.30	5.90%	4.98%
24	(100,20,20)	125654.84	128735.7	121892.5	125921.04	847.84	2.99%	2.19%
25	(500,2,5)	97.99	165.24	82.84	114.86	1391.53	15.46%	30.49%
26	(500,5,5)	8454.85	10038.43	6080	7678.56	1132.03	28.09%	23.51%
27	(500,10,5)	35727.47	37903.1	29545.53	33068.9	1051.89	17.30%	12.75%
28	(500,20,5)	85756.42	88754.86	74745.27	79796.19	902.40	12.84%	10.09%
29	(500,2,10)	499.87	577.19	337.91	509.12	1073.50	32.40%	11.79%
30	(500,5,10)	14764.71	15084.17	13120	13418.41	706.39	14.63%	11.04%
31	(500,10,10)	51254.57	52866.13	47953.5	49733.97	1044.56	6.44%	5.92%
32	(500,20,10)	109989.96	111587.42	102454.94	106164.71	910.41	6.85%	4.86%
33	(500,2,20)	1375.23	1378.87	1128.7	1299.39	1058.33	17.93%	5.76%
34	(500,5,20)	24137.06	24137.06	20396.66	21773.88	874.24	15.50%	10.94%
35	(500,10,20)	64983.04	66697.85	62317.26	64746.53	961.46	4.10%	2.93%
36	(500,20,20)	134533.41	135346.7	125514.98	130426.04	1320.62	6.70%	3.64%
#Best							32	33

Table 9: Comparison between RNS and CMSA on all benchmark instances (Benchmark set D)

Ins.	(n, m, k)	CMSA [?]		our RNS			Improvement	
		\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	$\bar{t}(s)$	\bar{f}_{min}	\bar{f}_{avg}
1	(50,2,5)	259.37	331.74	219.98	319.82	1181.92	15.19%	3.59%
2	(50,5,5)	13349.36	18165.86	12026.72	14092.34	1109.25	9.91%	22.42%
3	(50,10,5)	47209.97	55927.33	43521.93	49353.9	1065.22	7.81%	11.75%
4	(50,20,5)	101646.18	104588.41	96040.09	98826.67	682.40	5.52%	5.51%
5	(50,2,10)	3248.55	3869.17	2097.06	2801.86	1077.11	35.45%	27.59%
6	(50,5,10)	33022.08	36431.28	26691.99	29715.36	690.70	19.17%	18.43%
7	(50,10,10)	77325.11	77958.7	64831.27	69497.35	1265.18	16.16%	10.85%
8	(50,20,10)	115050.47	119382.14	108277.56	112580.63	1021.68	5.89%	5.70%
9	(50,2,20)	18559.03	18796.03	16531.67	16531.67	364.34	10.92%	12.05%
10	(50,5,20)	58028.36	58955.2	59055.74	59258.13	561.80	-1.77%	-0.51%
11	(50,10,20)	99126.04	100567.9	94405.06	94933.27	995.66	4.76%	5.60%
12	(50,20,20)	135484.42	137732.2	132755.14	133926.13	917.75	2.01%	2.76%
13	(100,2,5)	47.35	86.08	76.74	118.11	1538.12	-62.06%	-37.21%
14	(100,5,5)	6492.37	7556.08	6894.13	8923.66	1415.81	-6.19%	-18.10%
15	(100,10,5)	40133.88	40531.3	36556.22	40340.33	1410.58	8.91%	0.47%
16	(100,20,5)	89414.91	92156.78	85753.56	90597.92	918.07	4.09%	1.69%
17	(100,2,10)	605.48	1240.54	783.7	946.45	1658.95	-29.44%	23.71%
18	(100,5,10)	22158.33	25676.38	20055.44	21856.18	1255.93	9.49%	14.88%
19	(100,10,10)	64407.26	65359.88	58453.21	60894.24	1323.89	9.24%	6.83%
20	(100,20,10)	116703.74	120258.67	102931.11	111229.11	1379.83	11.80%	7.51%
21	(100,2,20)	4082.92	4379.85	3324.13	4004.06	1463.85	18.58%	8.58%
22	(100,5,20)	36973.17	38764.72	33748.8	36185.12	1170.79	8.72%	6.65%
23	(100,10,20)	78115.72	80067.68	71724.76	76837.82	1451.13	8.18%	4.03%
24	(100,20,20)	124628.6	129232.72	120178.72	122752.29	1618.35	3.57%	5.01%
25	(500,2,5)	110.87	157.73	48.68	79.29	1333.46	56.10%	49.73%
26	(500,5,5)	7935.47	9337.33	5607.35	6636.39	1384.87	29.34%	28.93%
27	(500,10,5)	36523.96	38212.02	31131.92	32659.71	1189.87	14.76%	14.53%
28	(500,20,5)	79500.16	87618.55	77030.19	80321.34	1262.45	3.11%	8.33%
29	(500,2,10)	522.48	611.63	370.31	489.02	1379.55	29.12%	20.05%
30	(500,5,10)	15461.21	16278.27	13324.22	13936.81	1300.72	13.82%	14.38%
31	(500,10,10)	53670.2	53670.2	47319.92	49459.41	1285.18	11.83%	7.85%
32	(500,20,10)	107663.95	112277.33	99746.55	105556.61	1270.63	7.35%	5.99%
33	(500,2,20)	1278.21	1363.24	1109.04	1223.06	1500.29	13.23%	10.28%
34	(500,5,20)	23535.27	23535.27	19862.11	20960.37	1115.59	15.61%	10.94%
35	(500,10,20)	64350.14	65616.54	62061.19	63481	1083.14	3.56%	3.25%
36	(500,20,20)	133688.11	133724.84	126188.1	129403.22	1327.66	5.61%	3.23%
#Best							32	33

Table 10: Comparison between LNS and CMSA on all benchmark instances (Benchmark set E)

Ins.	(n, m, k)	CMSA		our LNS			Improvement	
		\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	$\bar{t}(s)$	\bar{f}_{min}	\bar{f}_{avg}
1	(50,2,5)	250.71	379.08	195.53	292.79	1359.64	22.01%	22.76%
2	(50,5,5)	14812.82	17407.75	10728.54	13346.9	1023.13	27.57%	23.33%
3	(50,10,5)	51673.8	57177.61	44862.36	48805.32	710.31	13.18%	14.64%
4	(50,20,5)	100633.99	107561.19	91911.88	97882.18	982.67	8.67%	9.00%
5	(50,2,10)	2506.37	3701.38	2036.6	2708.5	1410.39	18.74%	26.82%
6	(50,5,10)	36852.3	40561.34	26784.53	28846.86	1247.05	27.32%	28.88%
7	(50,10,10)	73320.65	77355.67	67183.19	69822.9	953.05	8.37%	9.74%
8	(50,20,10)	115034.46	119113.2	108762.88	112686.74	1017.32	5.45%	5.40%
9	(50,2,20)	20258.86	20267.11	21742.08	21742.08	24.48	-7.32%	-7.28%
10	(50,5,20)	58421.24	59433.13	67120.47	67711.34	284.41	-14.89%	-13.93%
11	(50,10,20)	99815.82	101040.36	98692.08	99465.25	233.74	1.13%	1.56%
12	(50,20,20)	135130.26	136847.62	129602.51	132624.63	1039.55	4.09%	3.09%
13	(100,2,5)	33.56	61.1	57.03	86.45	1516.47	-69.95%	-41.48%
14	(100,5,5)	6964.79	7814.6	6993.37	8879.33	1472.83	-0.41%	-13.62%
15	(100,10,5)	39145.27	41203.8	34251.6	40039.78	1054.09	12.50%	2.83%
16	(100,20,5)	93565.39	95762.98	84473.4	89122.43	1082.73	9.72%	6.93%
17	(100,2,10)	1190.99	1711.93	645.84	897.24	1362.02	45.77%	47.59%
18	(100,5,10)	22188.78	25656.11	19089.06	21253.45	1172.64	13.97%	17.16%
19	(100,10,10)	70979.68	74407.83	57860.6	61807.51	1305.50	18.48%	16.93%
20	(100,20,10)	121402.35	122038.46	106071.24	112440.25	658.80	12.63%	7.86%
21	(100,2,20)	4265.26	5156.54	3031.26	3788.41	1364.80	28.93%	26.53%
22	(100,5,20)	37891.46	40240.04	30694.88	34784.75	1229.53	18.99%	13.56%
23	(100,10,20)	83151.43	84787.8	73503.68	78486.47	1307.65	11.60%	7.43%
24	(100,20,20)	129394.87	131217.02	119643.81	123718.67	1204.80	7.54%	5.71%
25	(500,2,5)	157.17	236.33	51.45	94.09	1372.10	67.26%	60.19%
26	(500,5,5)	7741.14	9111.47	7007.76	7865.28	1322.21	9.47%	13.68%
27	(500,10,5)	37252.97	39166.85	28991.02	33039.89	1348.34	22.18%	15.64%
28	(500,20,5)	88369.21	88883.42	76742.53	80427.37	1071.70	13.16%	9.51%
29	(500,2,10)	506.31	582.26	342.83	463.69	1281.85	32.29%	20.36%
30	(500,5,10)	15374.2	16142.35	13612.91	14345.03	1145.98	11.46%	11.13%
31	(500,10,10)	51909.58	52683.49	43347.42	49070.8	981.69	16.49%	6.86%
32	(500,20,10)	109303.3	113929.23	100976.26	106409.94	885.65	7.62%	6.60%
33	(500,2,20)	1236.93	1255.96	1020.69	1155.84	957.97	17.48%	7.97%
34	(500,5,20)	21096.09	23081.48	18973.94	21534.88	1188.59	10.06%	6.70%
35	(500,10,20)	66166.26	67291.51	61727.79	64107.13	1234.50	6.71%	4.73%
36	(500,20,20)	135522.11	138086.2	123033.9	130040.58	1667.35	9.21%	5.83%
#Best							32	32

Table 11: Comparison between LNS and other metaheuristics on benchmark instances (Benchmark set B)

Ins. (n, k)	MA		VNS		CMSA		our LNS		Improvement(%)	
	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}
1 (50, 5)	46423.91	50084.19	46453.83	50329.96	40617.16	42869.94	36168.11	40664.18	10.95%	5.15%
2 (50, 10)	62380.19	65193.65	60120.50	64585.90	56378.10	58928.14	51047.65	53858.50	9.45%	8.60%
3 (50, 20)	81286.98	82822.79	89501.95	95170.04	79717.11	80926.35	78284.99	79142.18	1.80%	2.20%
4 (100, 5)	45430.13	48064.43	42619.04	46259.22	34335.18	35468.31	33162.02	35385.41	3.42%	0.23%
5 (100, 10)	59935.98	69128.34	64275.78	68331.36	49951.31	52651.54	47727.19	49646.60	4.45%	5.71%
6 (100, 20)	75304.68	85937.62	78474.27	85616.91	61440.43	63366.24	58386.87	60889.89	4.97%	3.91%
7 (500, 5)	54341.33	59785.34	53732.82	62440.65	32509.18	34215.41	27613.41	30164.63	15.06%	11.84%
8 (500, 10)	65238.39	72466.53	77988.79	86855.55	44127.28	45419.71	41068.32	42820.91	6.93%	5.72%
9 (500, 20)	83559.44	91409.66	145754.26	162031.27	56257.18	56890.12	52339.40	54561.46	6.96%	4.09%
Average	63766.78	69432.51	73213.47	80180.10	50592.55	52303.97	47310.89	49681.53	7.11%	5.27%
#Best	0		0		3		33			

Table 12: Comparison between LNS and other metaheuristics on benchmark instances (Benchmark set C)

Ins. (n, k)	MA		VNS		CMSA		our LNS		Improvement(%)	
	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}
1 (50, 5)	48570.74	51302.24	46567.85	51222.11	42394.37	45555.17	38621.16	41222.08	8.90%	9.51%
2 (50, 10)	62959.32	65386.46	62736.29	67872.65	56707.74	59943.22	51043.84	54199.53	9.99%	9.58%
3 (50, 20)	79301.2	81694.24	90106.76	96006.63	75059.12	76624.97	77835.36	78599.78	-3.70%	-2.58%
4 (100, 5)	43040.56	46665.28	40195.58	45236.7	31776.71	35328.97	32009.13	34895.25	-0.73%	1.23%
5 (100, 10)	63311.44	69131.97	62783.43	69294.17	50608.13	53381.95	45949.06	49102.68	9.21%	8.02%
6 (100, 20)	72118.43	83022.81	80558.15	86990.71	62237.63	64179.75	58058.15	60245.48	6.72%	6.13%
7 (500, 5)	38325.52	44525.43	41886.59	47489.25	31813.54	33072.94	26809.59	29543.88	15.73%	10.67%
8 (500, 10)	52048.28	55150.33	57309.51	63868.42	43749.21	45424.28	39918.90	42274.16	8.76%	6.93%
9 (500, 20)	58772.68	71862.63	104692.93	118724.63	54773.14	56652.40	50519.90	53666.64	7.77%	5.27%
Average	57605.35	63193.49	65204.12	71856.14	49902.18	52240.40	46751.68	49305.50	6.96%	6.08%
#Best	0		0		5		31			

Table 13: Comparison between LNS and other metaheuristics on benchmark instances (Benchmark set D)

Ins. (n, k)	MA		VNS		CMSA		our LNS		Improvement(%)	
	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}
1 (50, 5)	47721.01	50317.96	46438.22	50119.44	40616.22	44753.33	37952.18	40648.18	6.56%	9.17%
2 (50, 10)	62168.49	65633.36	62007.21	65902.01	57161.55	59410.32	50474.47	53648.80	11.70%	9.70%
3 (50, 20)	79230.26	82028.86	87363.97	94905.41	77799.46	79012.83	75686.90	76162.30	2.72%	3.61%
4 (100, 5)	43746.70	46612.20	39157.51	44677.90	34022.13	35082.56	32320.16	34995.01	5.00%	0.25%
5 (100, 10)	59536.78	68816.35	61937.35	67131.74	50968.70	53133.87	45555.86	48731.49	10.62%	8.29%
6 (100, 20)	71585.53	80702.63	79754.95	85740.22	60950.10	63111.24	57244.10	59944.82	6.08%	5.02%
7 (500, 5)	42167.08	45964.87	40982.50	46176.69	31017.61	33831.41	28454.53	29924.18	8.26%	11.55%
8 (500, 10)	47837.13	54195.77	58264.82	64047.75	44329.46	45709.36	40190.25	42360.46	9.34%	7.33%
9 (500, 20)	57828.51	65759.57	106092.05	122768.21	55712.93	56059.97	52305.11	53766.91	6.12%	4.09%
Average	56869.05	62225.73	64666.51	71274.37	50286.46	52233.88	46687.06	48909.13	7.38%	6.56%
#Best	0		0		3		33			

Table 14: Comparison between LNS and other metaheuristics on benchmark instances (Benchmark set E)

Ins. (n, k)	MA		VNS		CMSA		our LNS		Improvement(%)	
	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}	\bar{f}_{min}	\bar{f}_{avg}
1 (50, 5)	49364.62	51800.53	46535.47	50524.88	41842.83	45631.41	36924.57	40081.80	11.75%	12.16%
2 (50, 10)	64306.78	66917.61	62542.99	67378.65	56928.44	60182.90	51191.80	53516.25	10.08%	11.08%
3 (50, 20)	83569.63	85775.87	92320.41	98133.12	78406.55	79397.06	79289.28	80385.82	-1.13%	-1.25%
4 (100, 5)	44086.84	47736.32	43136.01	46203.93	34927.25	36210.62	31443.85	34532.00	9.97%	4.64%
5 (100, 10)	63148.40	72326.88	64232.73	68700.42	53940.45	55953.58	45916.68	49099.61	14.88%	12.25%
6 (100, 20)	72441.85	84939.00	80086.91	86557.77	63675.76	65350.35	56718.41	60194.57	10.93%	7.89%
7 (500, 5)	42141.18	45971.13	39112.69	46918.16	33380.12	34349.52	28198.19	30356.66	15.52%	11.62%
8 (500, 10)	50035.10	55385.91	57052.13	64458.62	44273.35	45834.33	39569.85	42572.36	10.62%	7.12%
9 (500, 20)	61653.70	70682.05	106337.22	120260.40	56005.35	57428.79	51189.08	54209.61	8.60%	5.61%
Average	58972.01	64615.03	65706.28	72126.22	51486.68	53370.95	46715.75	49438.74	10.14%	7.90%
#Best	0		0		4		32			