misalign

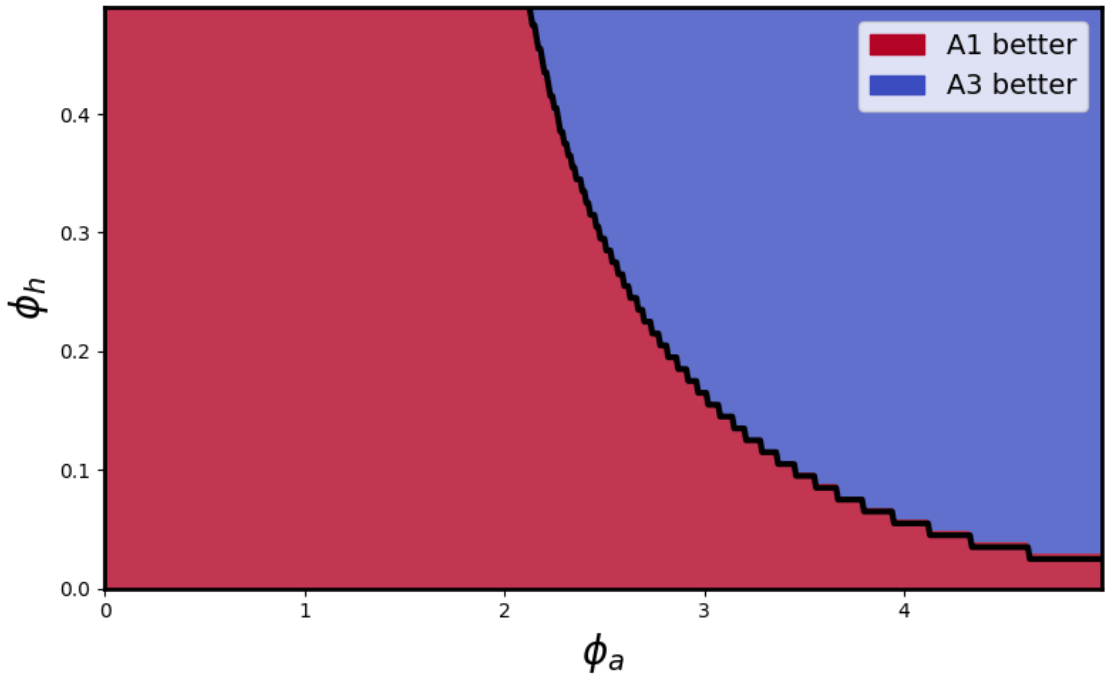
May 19, 2025

[4]:
```
from plot import *
```

1 Numerical Extensions of Section 4

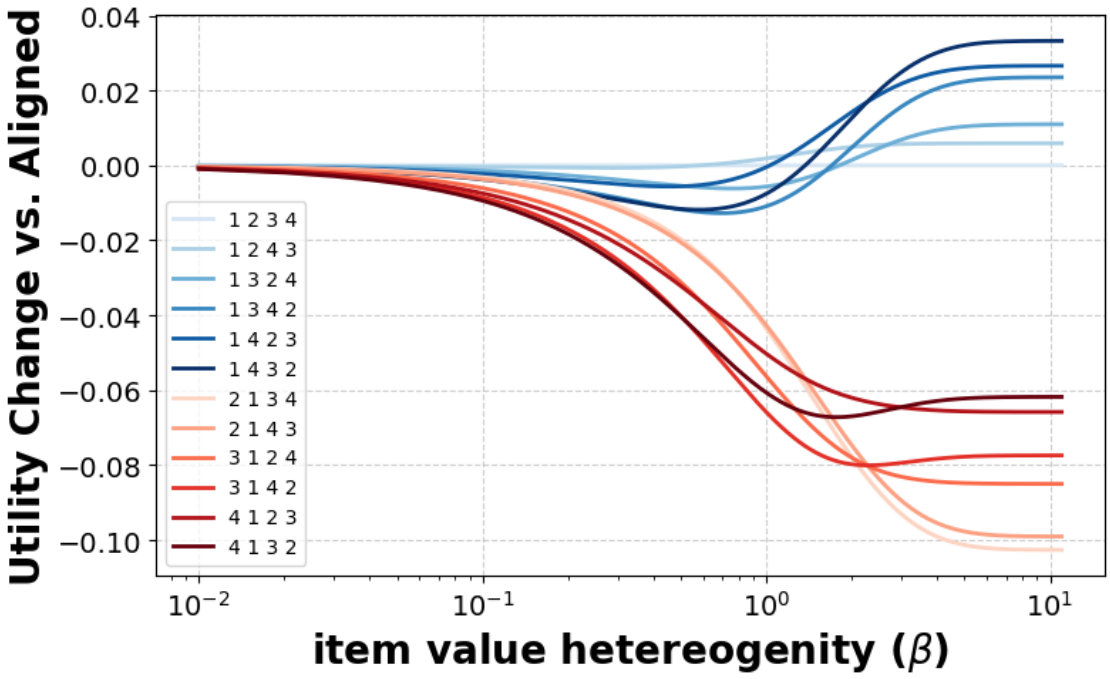
1.1 Comparison between A1 and A3

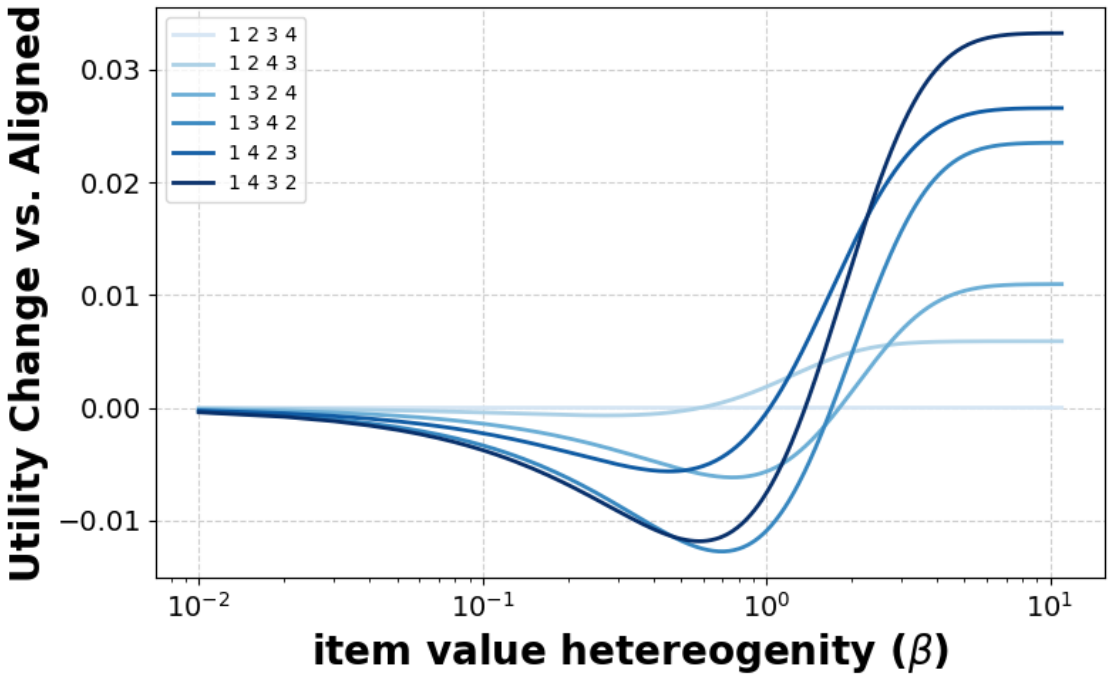
[3]:
```
plot_comparison_of_a1_a3()
```



1.2 Comparative Benefits of Misalignment Extension of Theorem 1

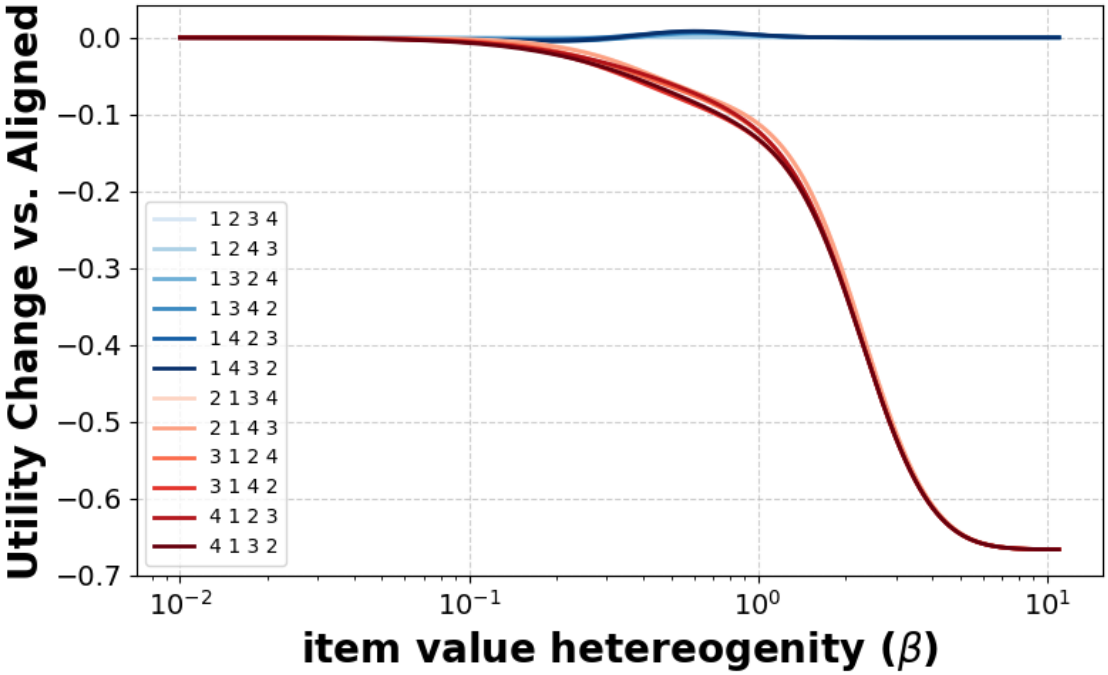
[3]:
```
# Figure 4
comparion_between_aligned_and_misaligned_algorithm()
comparion_between_aligned_algorithms()
```

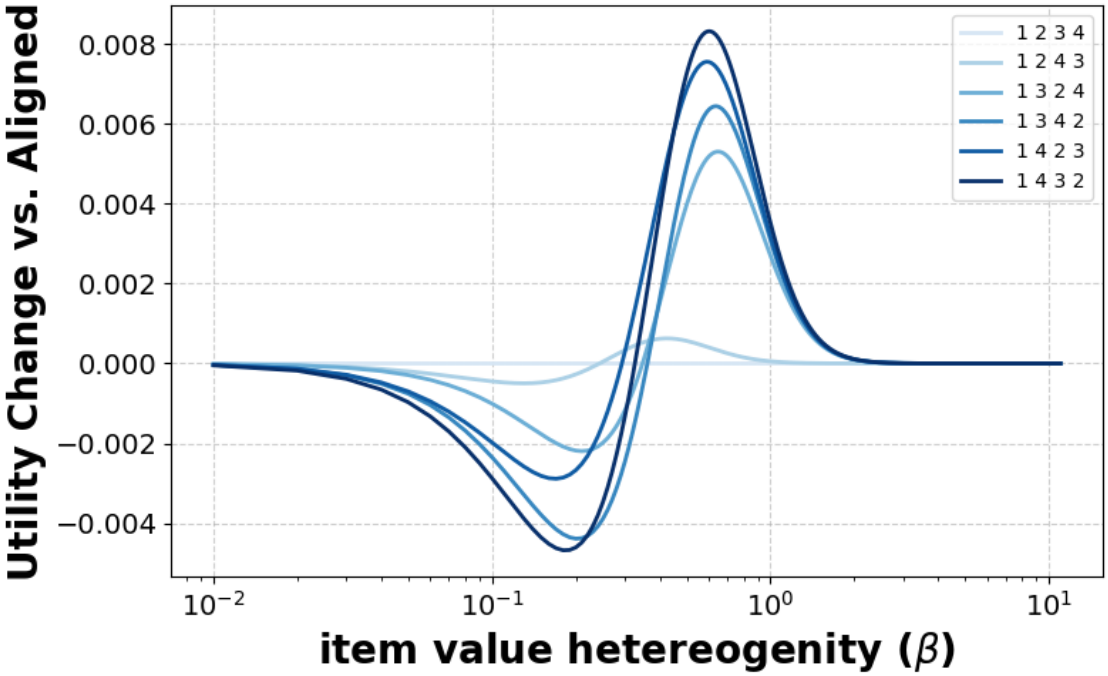




[5]:
```
# Figure 5
comparion_between_aligned_and_misaligned_algorithm_RUM()
```

```
comparion_between_aligned_algorithms_RUM()
```

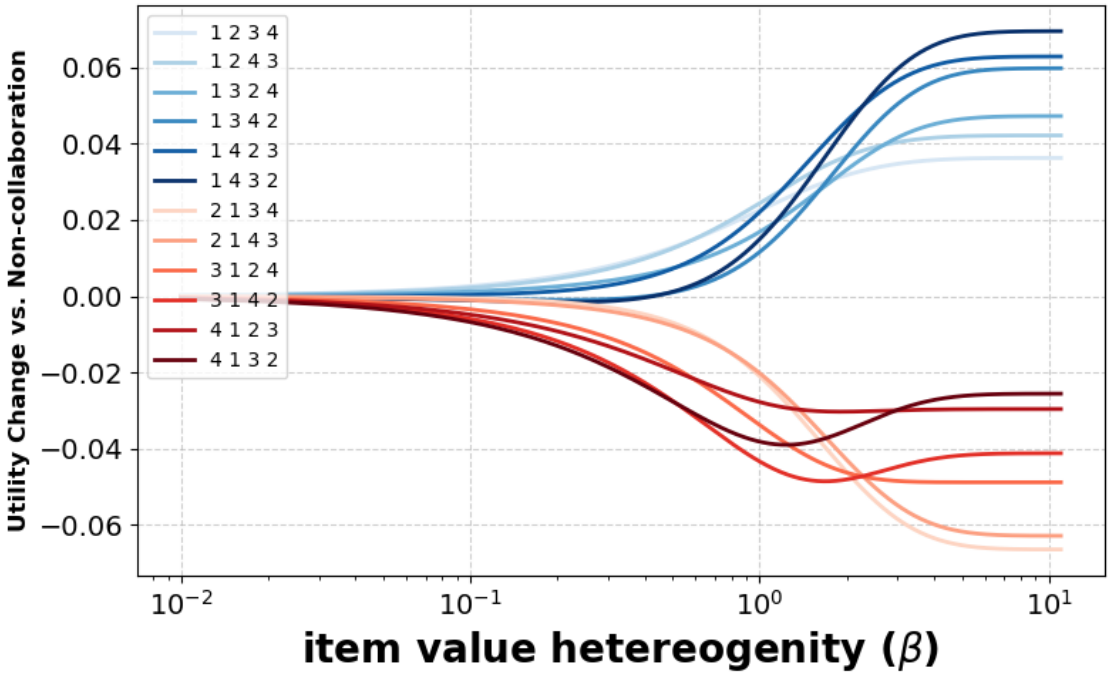


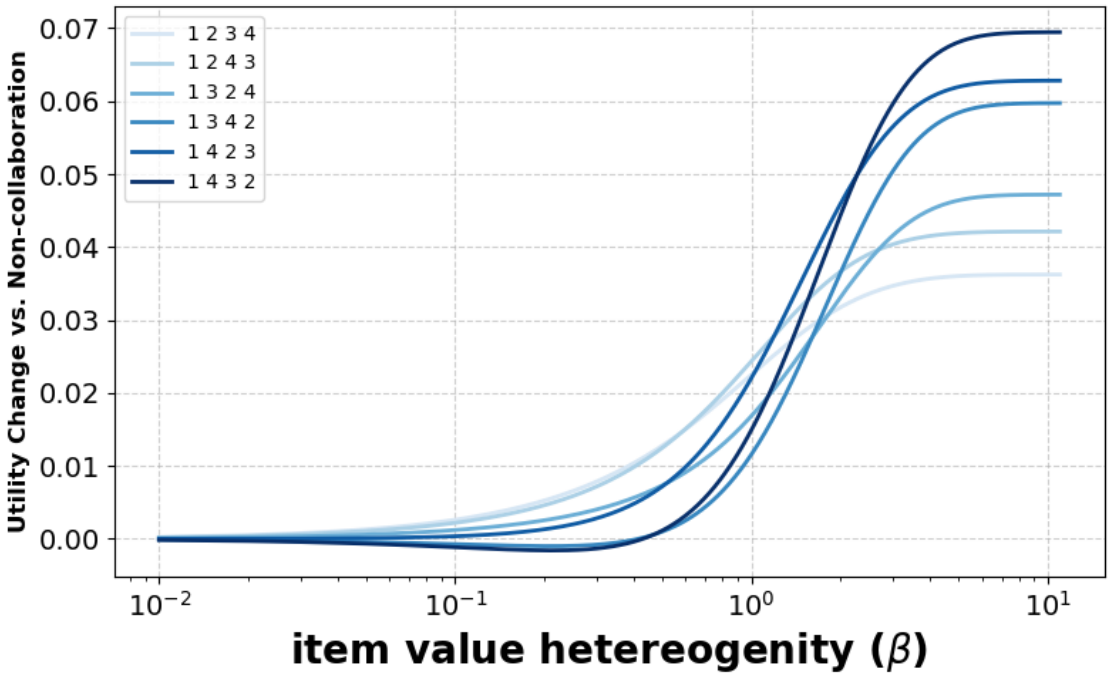


2 Numerical Extensions of Section 5

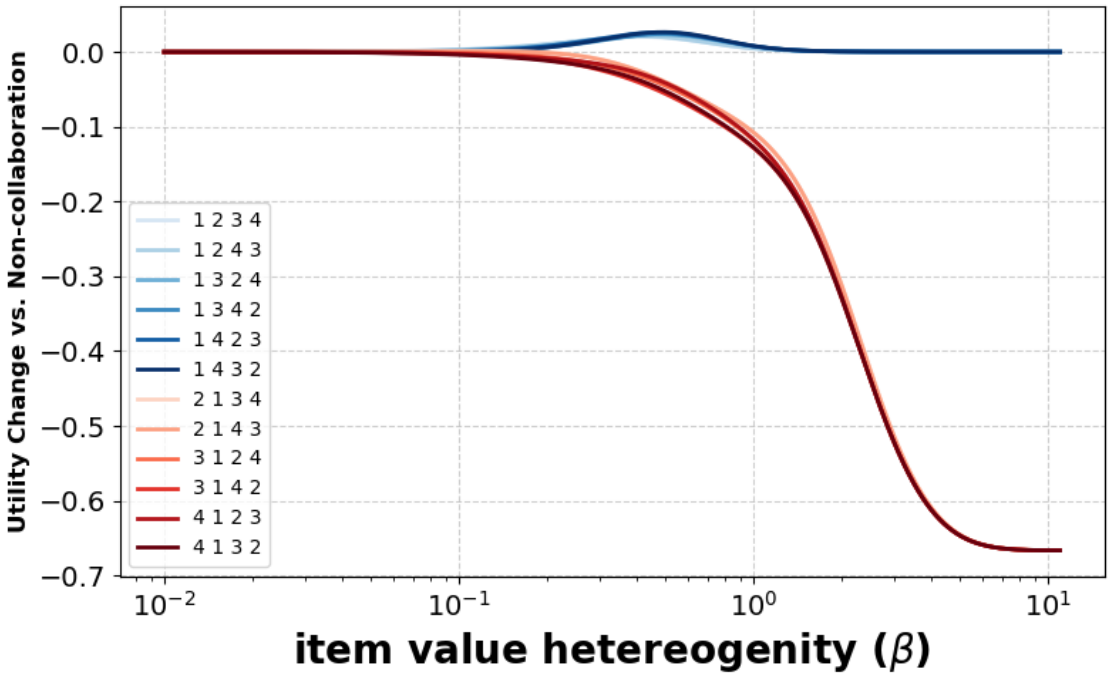
2.1 Uplift with Misalignment

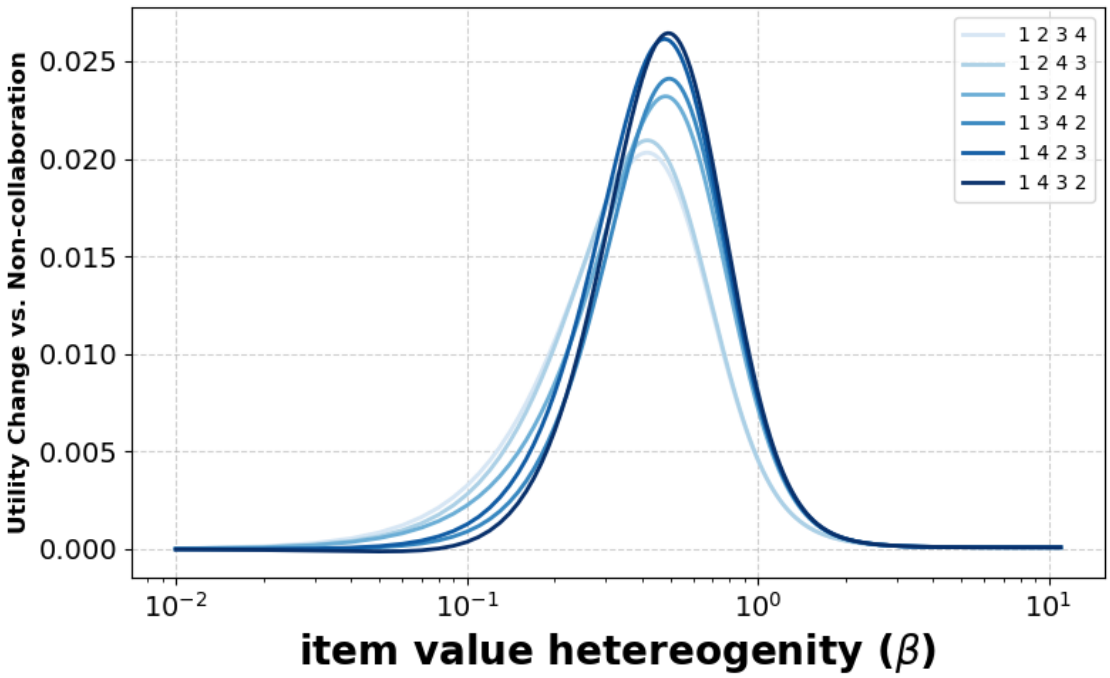
[6]:
```
# Figure 6.1
comparion_between_algorithms_over_noncollaboration()
# Figure 6.2
comparion_between_aligned_algorithms_over_noncollaboration()
```





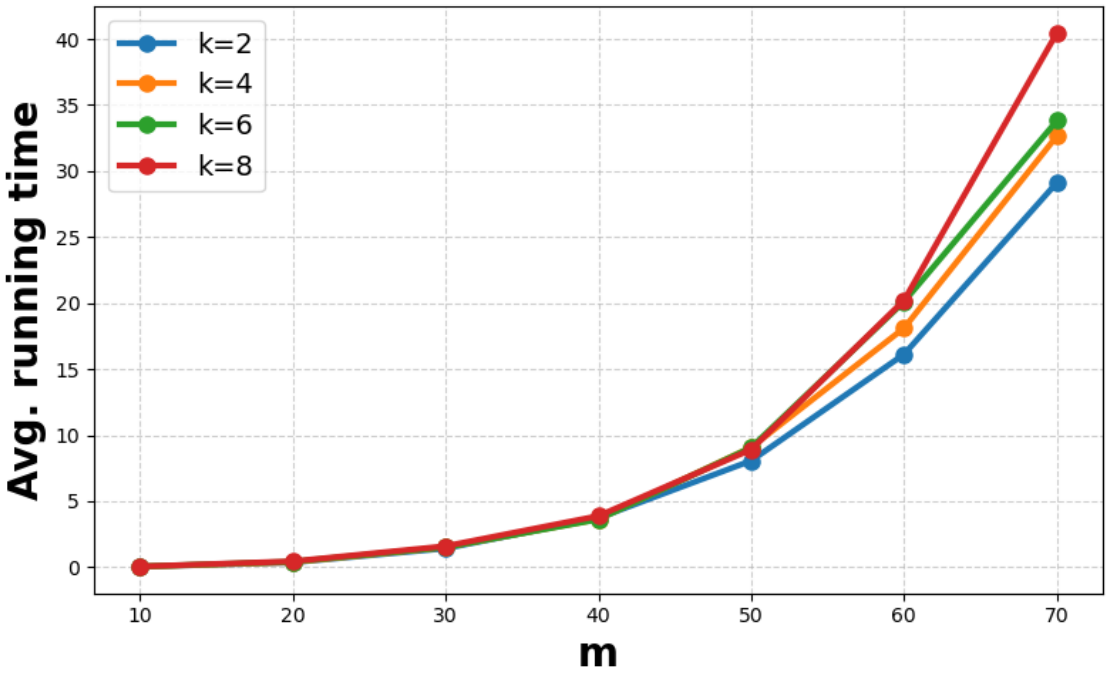
[7]:
```
# Figure 7.1
comparion_between_algorithms_over_noncollaboration_RUM()
# Figure 7.2
comparion_between_aligned_algorithms_over_noncollaboration_RUM()
```

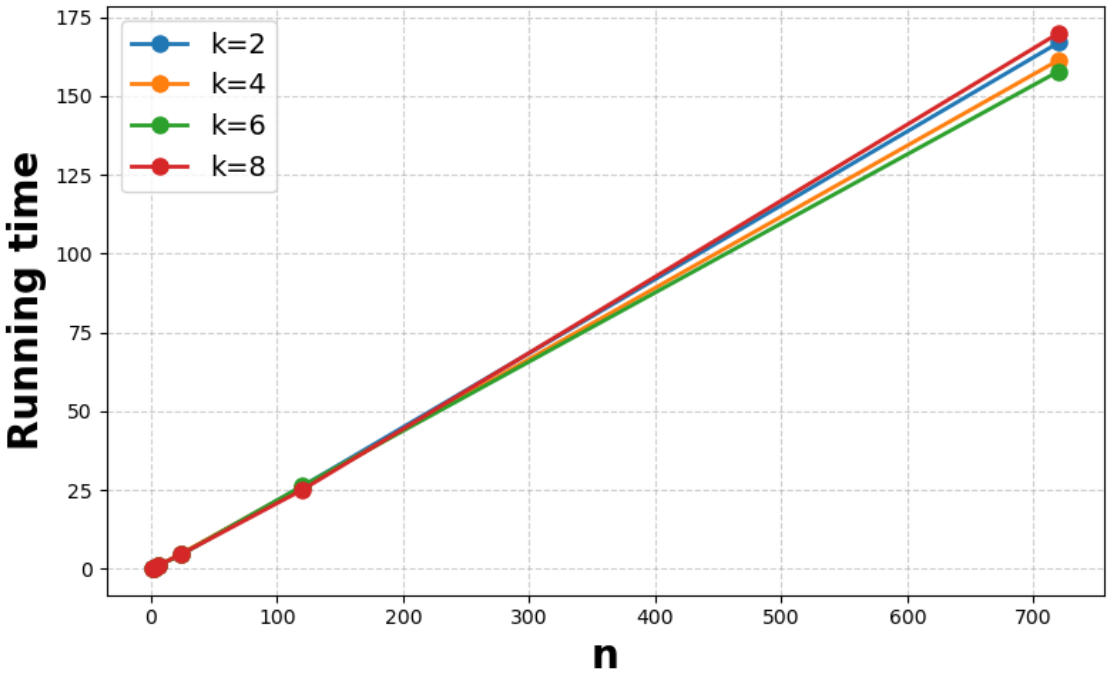




2.2 Performance of MIP

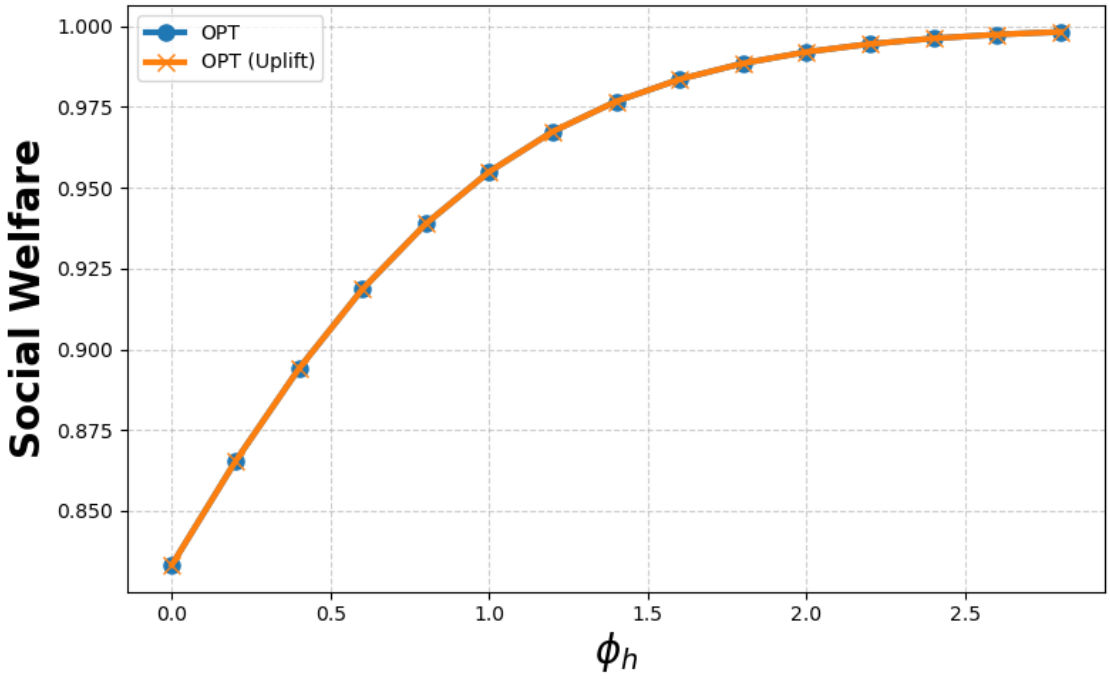
[10]:
```
# Figure 8 and 9
plot_running_time(True)
```

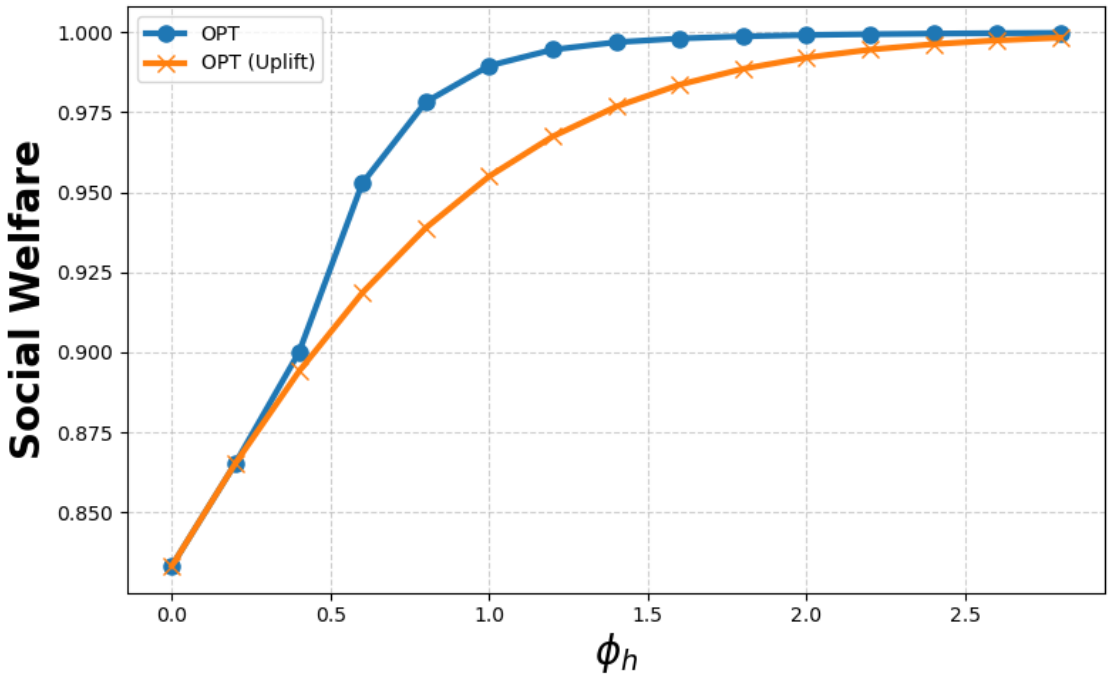

k=2
k=4
k=6
k=8
Avg. running time
m
0
5
10
15
20
25
30
35
40
10
20
30
40
50
60
70

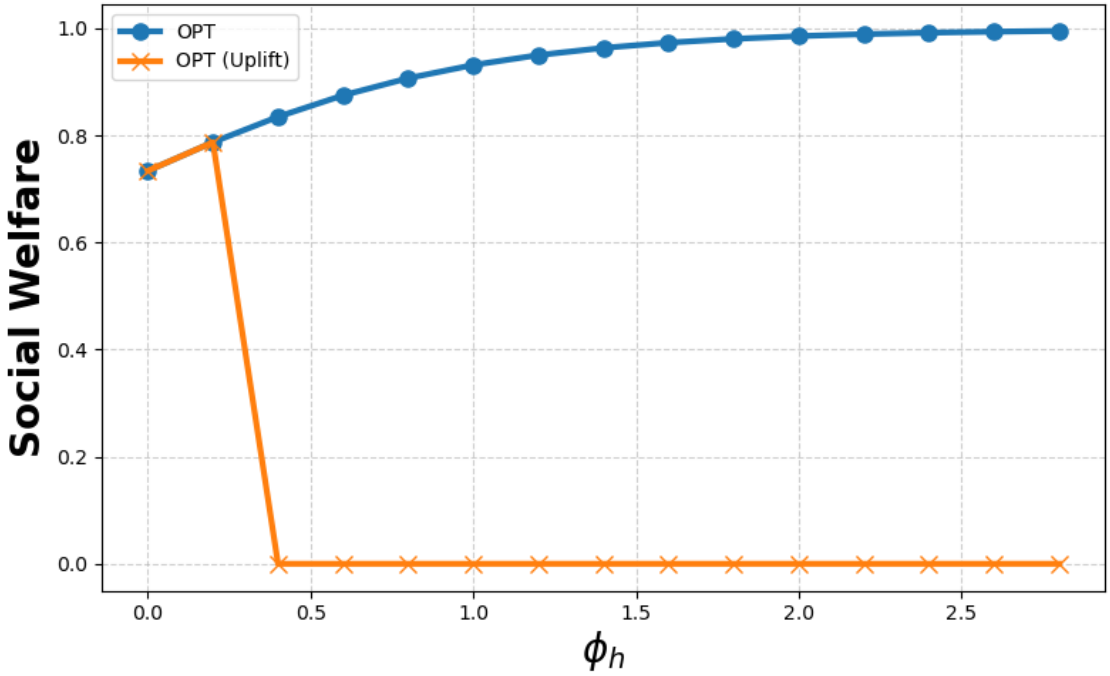

k=2
k=4
k=6
k=8
Running time
n
0
25
50
75
100
125
150
175
0
100
200
300
400
500
600
700

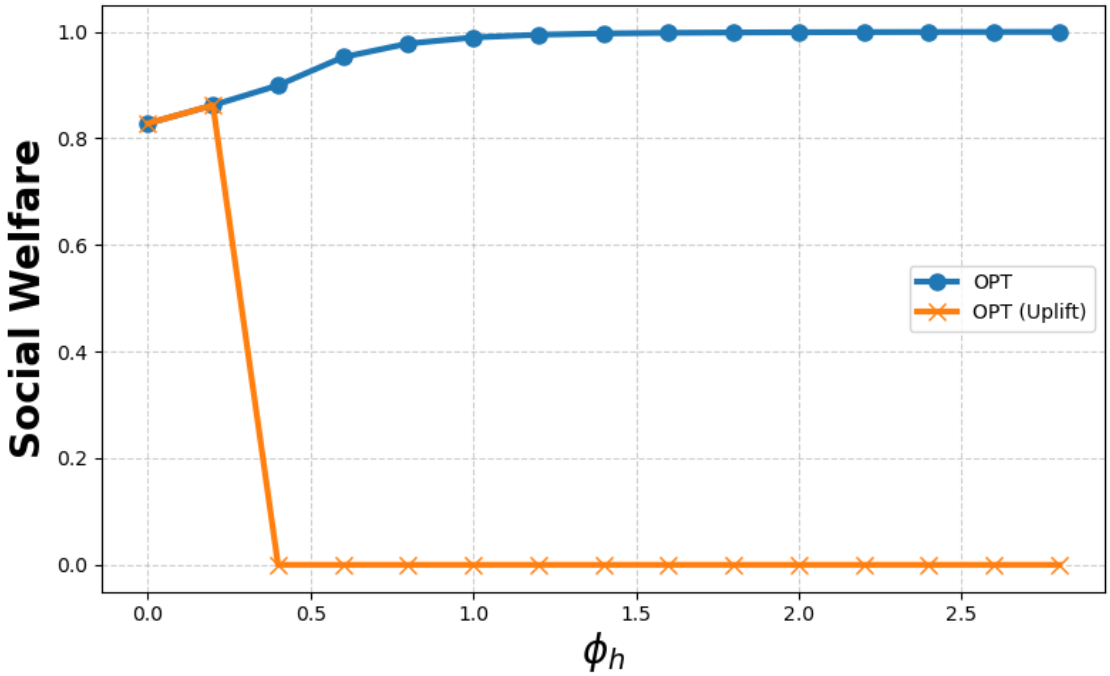
2.3 Tensions between Uplift and Social Welfare

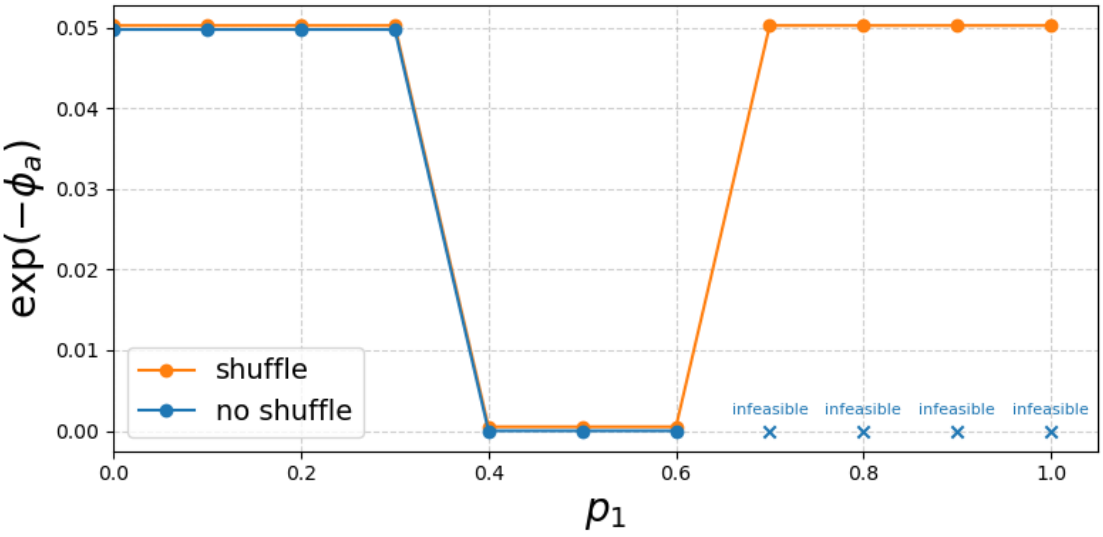
[11]:
```
# Figure 10 to 13
plot_social_welfare_uplift(from_stored=True)
```






OPT
OPT (Uplift)
Social Welfare
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.5
1.0
1.5
2.0
2.5
ϕ_h


OPT
OPT (Uplift)
Social Welfare
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.5
1.0
1.5
2.0
2.5
ϕ_h

2.4 Small Noise Faciliates Uplift

[12]:
```
# Figure 14
plot_minimum_noise_for_uplift(from_stored=True)
```