The analysis involves evaluating and comparing the distance and optimization results obtained from the simulation model.
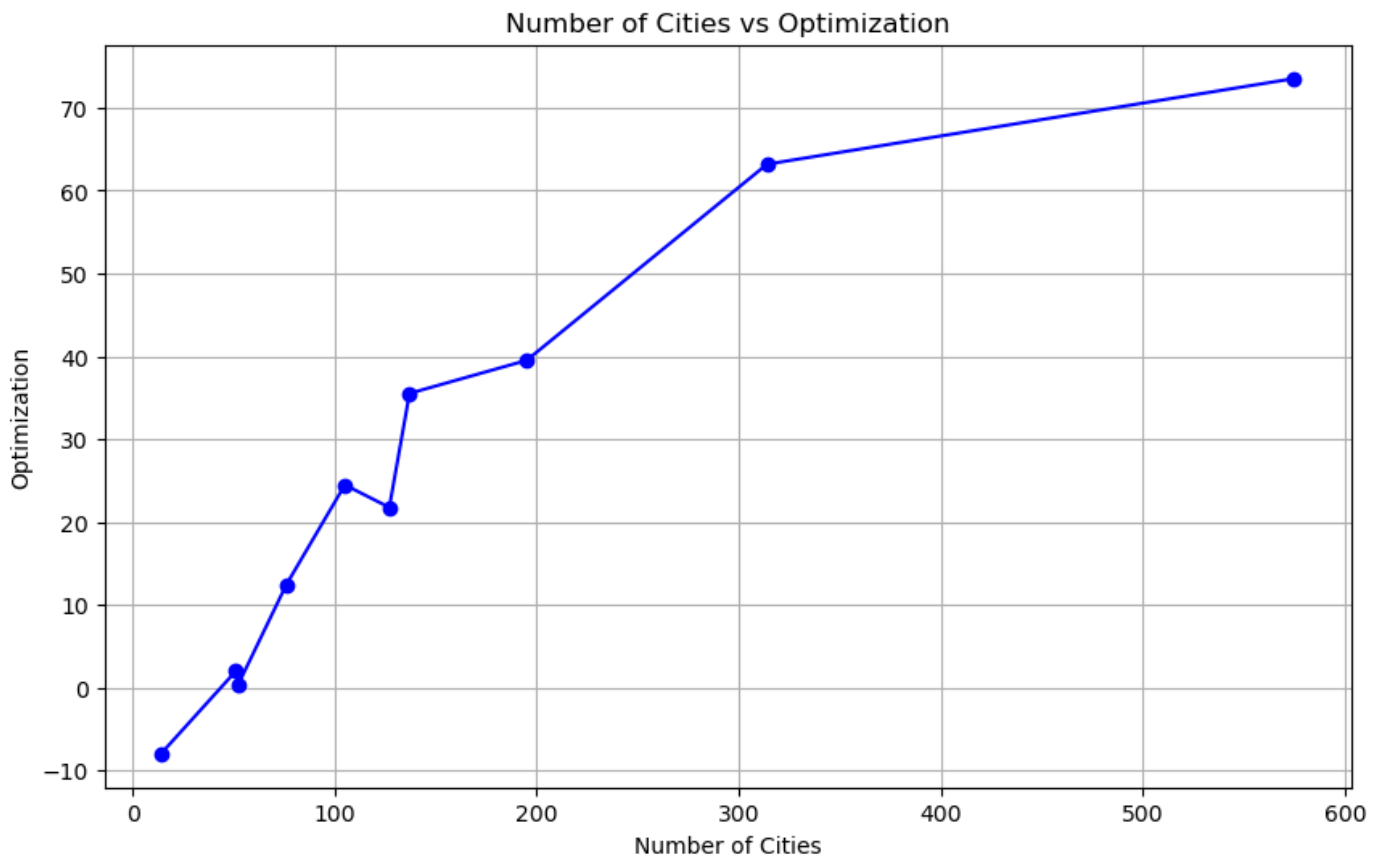
Number of cities vs Optimization graph

In [6]:
```python
import pandas as pd
import matplotlib.pyplot as plt

# data
data = {
    'Number of Cities': [14, 51, 52, 76, 105, 127, 137, 195, 314, 575],
    'GA (length)': [24.05, 476.41, 7816.51, 655.81, 21914.67, 165636.56, 1346.26, 4580.8
    'ACO-GA (length)': [25.96, 466.84, 7793.14, 574.2, 16547.12, 129574.17, 867.88, 2770
    'Optimization': [-7.94, 2.01, 0.30, 12.44, 24.49, 21.77, 35.53, 39.52, 63.19, 73.53]
}

# Creating a DataFrame
df = pd.DataFrame(data)

# Plotting
plt.figure(figsize=(10, 6))
plt.plot(df['Number of Cities'], df['Optimization'], marker='o', linestyle='-', color='b
plt.title('Number of Cities vs Optimization')
plt.xlabel('Number of Cities')
plt.ylabel('Optimization')
plt.grid(True)
plt.show()
```


Number of Cities vs Path Length graph

In [1]:
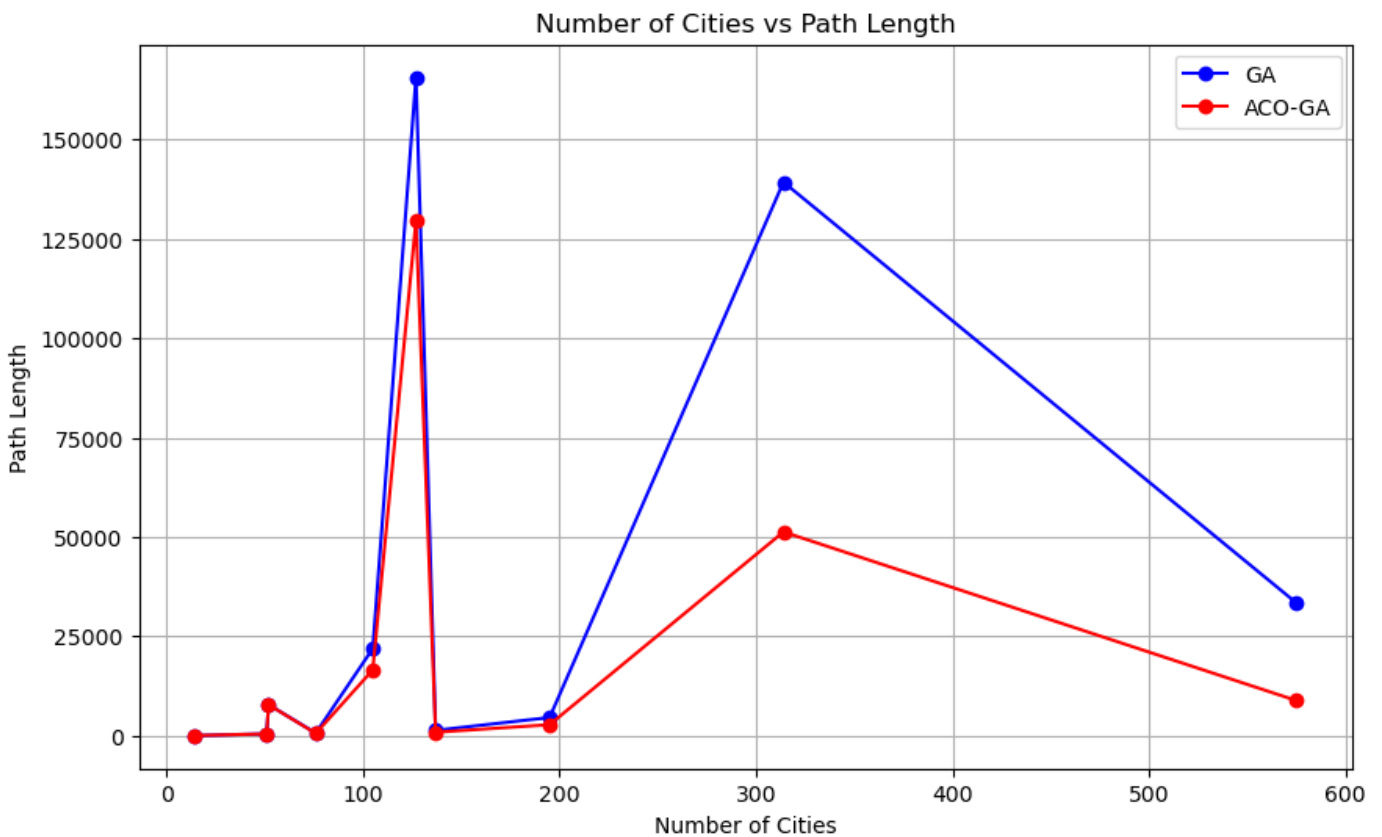```python
import pandas as pd
```

```python
import matplotlib.pyplot as plt

# data
data = {
    'Number of Cities': [14, 51, 52, 76, 105, 127, 137, 195, 314, 575],
    'GA (length)': [24.05, 476.41, 7816.51, 655.81, 21914.67, 165636.56, 1346.26, 4580.8
    'ACO-GA (length)': [25.96, 466.84, 7793.14, 574.2, 16547.12, 129574.17, 867.88, 2770
    'Optimization': [-7.94, 2.01, 0.30, 12.44, 24.49, 21.77, 35.53, 39.52, 63.19, 73.53]
}

# Creating a DataFrame
df = pd.DataFrame(data)

# Plotting
plt.figure(figsize=(10, 6))
plt.plot(df['Number of Cities'], df['GA (length)'], marker='o', linestyle='-', color='b'
plt.plot(df['Number of Cities'], df['ACO-GA (length)'], marker='o', linestyle='-', color
plt.title('Number of Cities vs Path Length')
plt.xlabel('Number of Cities')
plt.ylabel('Path Length')
plt.legend()
plt.grid(True)
plt.show()
```


In [ ]:

In [ ]: