```
import pandas as pd

url = "https://media.geeksforgeeks.org/wp-content/uploads/Wine.csv"
df = pd.read_csv(url)

target_col = 'Customer_Segment'
y = df[target_col]
X = df.drop(columns=[target_col])

scaler = StandardScaler()
X_scaled = scaler.fit_transform(X)

pca = PCA(n_components=0.95, random_state=42)
X_pca = pca.fit_transform(X_scaled)

pc_cols = [f'PC{i+1}' for i in range(X_pca.shape[1])]
df_pca = pd.DataFrame(X_pca, columns=pc_cols)
df_pca['Segment'] = y

print(f"Original features: {X.shape[1]}")
print(f"PCA reduced to   : {X_pca.shape[1]} components")
print("Explained Variance Ratio:", pca.explained_variance_ratio_)

plt.figure(figsize=(8,6))
sns.scatterplot(
    data=df_pca,
    x='PC1', y='PC2',
    hue='Segment',
    palette='Set1',
    alpha=0.8
)
```

```
plt.title("PCA - Wine Dataset (by Customer Segment)")
plt.tight_layout()
plt.show()
```

Output:-

```
Original features: 13
PCA reduced to  : 10 components
Explained Variance Ratio: [0.36198848 0.1920749  0.11123631 0.0706903  0.06563294 0.04935823
 0.04238679 0.02680749 0.02222153 0.01930019]
```