Aufgabe 2b

Sonntag, 4. Dezember 2022 21:14

b_0 = -11.206
b_1 = 0.557

Mit Maximum -Likelihood

i) 1 Arbeitstunde mehr wird investiert

$p(Y=1, x^* = [x + 1]) = \frac{1}{1+e^{-(-11.206+0.557*(x+1))}} = \frac{1}{1+e^{-((-11.206+0.557)+0.557*x)}} = \frac{1}{1+e^{-(-10.649+0.557*x)}}$

```
for x in df.values:
    print(1/ (1 + np.exp(-(-11.206 + 0.557*(x[0]+1)))))
```

```
0.9381385245239885
0.8967848191197315
0.997673358232554
0.8327160444615171
0.03204637827643722
0.03204637827643722
0.9635962293821564
0.9381385245239885
0.9986656823063607
0.23505219623623563
0.006187607176681331
0.4835059868921235
0.018614947604725075
0.6203419784777656
0.09162109898545823
0.8967848191197315
0.9877511652624036
0.3490994561197116
0.8327160444615171
0.8967848191197315
```

ii) 10 Arbeitstunden mehr werden investiert

$p(Y= 1, x^* = [x + 10]) = \frac{1}{1+e^{-(-11.206+0.557*(x+10))}} = \frac{1}{1+e^{-((-11.206+5.57)+0.557*x)}} = \frac{1}{1+e^{-(-5.636+0.557*x)}}$

```python
for x in df.values:
    print(1/ (1 + np.exp(-(-11.206 + 0.557*(x[0]+10)))))
```

```
0.9995616261487432
0.9992350998020796
0.9999844898438057
0.9986656823063607
0.8327160444615171
0.8327160444615171
0.9997487975157883
0.9995616261487432
0.9999911137808047
0.9788139782566615
0.4835059868921235
0.9929454294810411
0.7403906593837892
0.9959460444484332
0.9381385245239885
0.9992350998020796
0.9999175305365271
0.9877511652624036
0.9986656823063607
0.9992350998020796
```