chi_odr

January 30, 2023

[1]:
```
import numpy as np
import statsmodels.stats.proportion as smp
```

[2]:
```
#Age
positive = [87, 32]
negative = [98, 263]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  13.770149750780861
p-value:  1.9270670779642502e-43
```

[3]:
```
#sex
positive = [25, 94]
negative = [95, 266]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  -1.6058488435926492
p-value:  0.9458464370975677
```

[4]:
```
#presence of cat
positive = [106, 13]
negative = [56, 305]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  27.073417016660983
p-value:  1.0124720808157556e-161
```

[5]:
```
#cat in contact with cattle
positive = [114, 5]
negative = [30, 331]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  42.22802912820749
p-value:  0.0
```

[6]:
```
#Cat contact with drinking water
positive = [87, 32]
negative = [34, 327]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  29.053005646803218
p-value:  7.049925344266416e-186
```

[7]:
```
#Presence of rats
positive = [112, 7]
negative = [242, 119]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  7.675741370928536
p-value:  8.22323275271998e-15
```

[8]:
```
#House type
positive = [107, 12]
negative = [283, 78]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  3.730242940099198
p-value:  9.564761438931152e-05
```

[9]:
```
#Water source
positive = [65, 54]
negative = [241, 120]
odds_ratio, p_value = smp.proportions_ztest(positive, negative,␣
 ↪alternative='larger')

print("Odds Ratio: ", odds_ratio)
print("p-value: ", p_value)
```

```
Odds Ratio:  -3.432766946394759
p-value:  0.9997012722939548
```