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Probability and Statistics - IT2120

Lab sheet 10

Exercise

1.

I. Null hypothesis (H_0): Customers choose all four snack types with equal probability

Alternative hypothesis (H_1): Customers do not choose all four snack types with equal probability.

ii.

```
> getwd()
[1] "C:/Users/kavee/Documents"
> setwd ("C:\\Users\\kavee\\Desktop\\Lab 10")
> observed <- c(120, 95, 85, 100)
> total <- sum(observed)
> expected <- rep(total / 4, 4)
> chisq_test <- chisq.test(x = observed, p = rep(1/4, 4))
> chisq_test

        Chi-squared test for given probabilities

data:  observed
X-squared = 6.5, df = 3, p-value = 0.08966
```

iii. If the p-value < 0.05 → reject H_0 (snack choices are not equally likely).

If the p-value >= 0.05 → fail to reject H_0 (no evidence against equal preference).