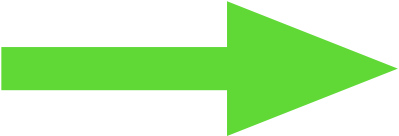




**Consumption Patterns**











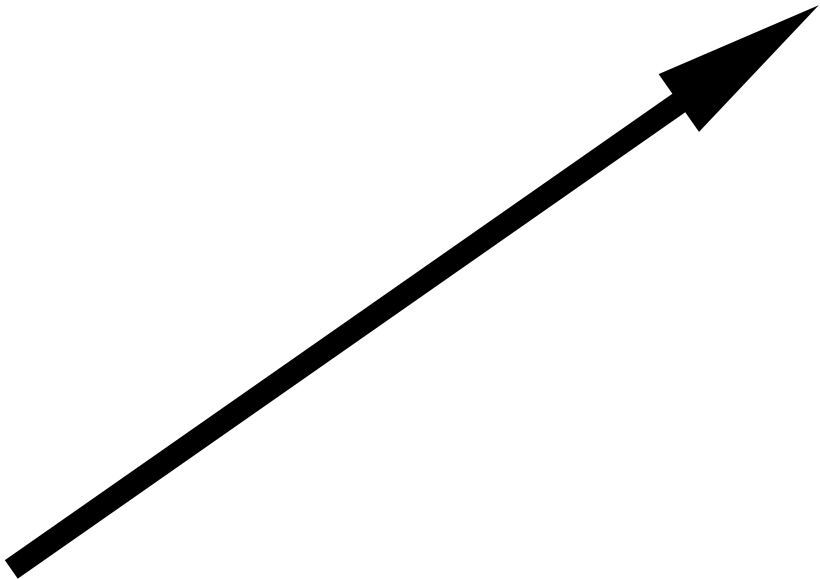




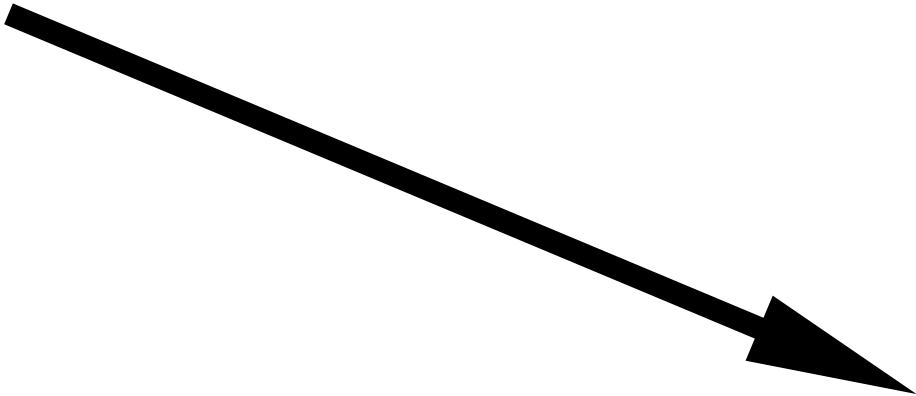












$$\text{Support} = \frac{\text{freq}(X, Y)}{N} = P(X \cup Y)$$

$$\text{Confidence} = \frac{\text{freq}(X, Y)}{\text{freq}(X)} = P(Y | X)$$



$$\phi = \frac{P(X \cap Y) - P(X)P(Y)}{\sqrt{P(X)(1 - P(X))P(Y)(1 - P(Y))}} = \sqrt{\frac{\chi^2}{n}}$$



Consumer  
Data  
Research  
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# An ESRC Data Investment

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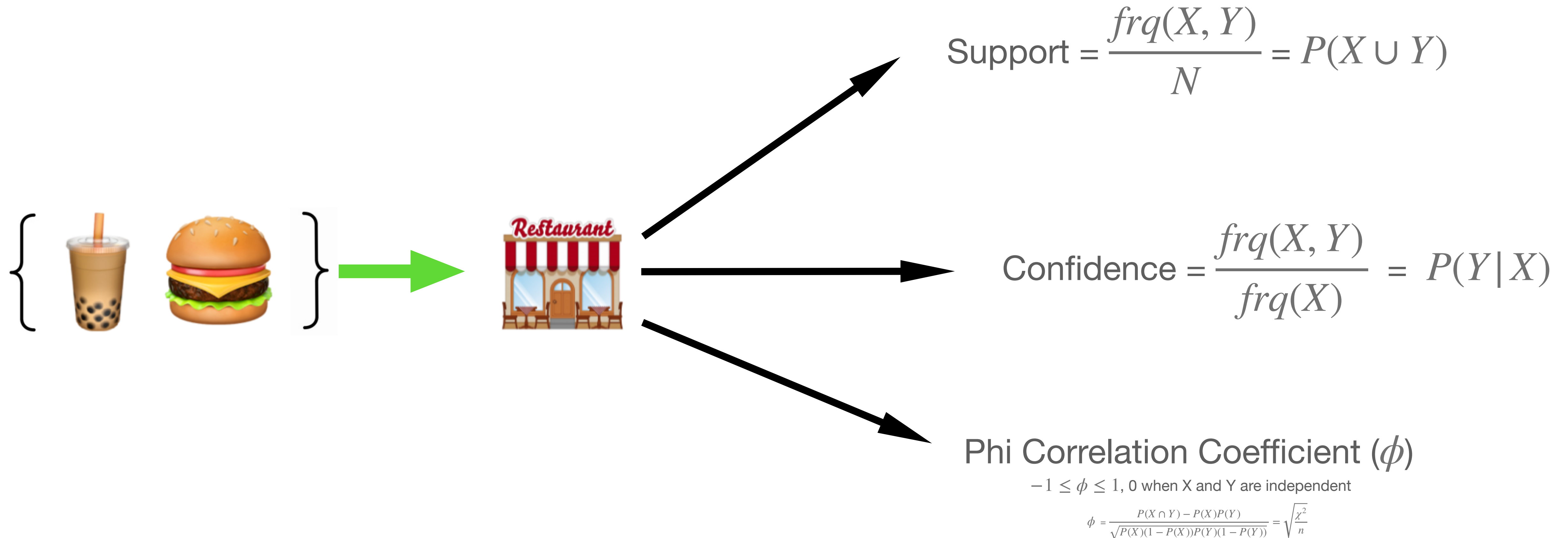


# Phi Correlation Coefficient ( $\phi$ )

$-1 \leq \phi \leq 1$ , 0 when  $X$  and  $Y$  are independent



# Consumption Patterns



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# Consumption Patterns

