4) CONDITIONAL PROBABILITY

GIVEN:

FCV HC

P(FREQ CONS VEGS = HIGH CONSUMPTION) = 0,47 18143

N NW

P(NOBESITY = NORMAL_WEIGHT) = 0,1359545

FOT PT

P(FORM OF TRANSPORTATION = PUBLIC_TRANS) = 0,7484604

$$P(FOT=PT \mid FCV=HC, N=NW) =$$

$$\frac{P(FCV=HC, N=NW \mid FOT=PT) \cdot P(FOT=PT)}{P(FCV=HC, N=NW)} =$$

$$P(FCV=HC, N=NW \mid FOT=PT) =$$

$$P(FCV=HC \mid FOT=PT) \cdot P(N=NW \mid FOT=PT) =$$

$$\frac{P(FCV=HC, FOT=PT)}{P(FOT=PT)} \cdot \frac{P(N=NW, FOT=PT)}{P(FOT=PT)} =$$

$$\frac{P(FCV=HC) \cdot P(FOT=PT)}{P(FOT=PT)} \cdot \frac{P(N=NW) \cdot P(FOT=PT)}{P(FOT=PT)} =$$

$$\frac{0,4718143 \cdot 0,7484604}{0,7484604} \cdot \frac{0,1359545 \cdot 0,7484604}{0,7484604} =$$

0,47 18143 · 0,1359545

$P(FCV=HC, N=NW, FOT \neq PT) =$

$P(FCV=HC) \cdot P(N=NW) \cdot (1 - P(FOT=PT)) =$

$0,47\,18143 \cdot 0,1359545 \cdot (1 - 0,74\,84604) =$

$0,0647\,18143 \cdot 0,1359545 \cdot 0,2515396 =$

$0,0158661$

$P(FCV=HC, N=NW) = P(FCV=HC, N=NW, FOT=PT) +$
$P(FCV=HC, N=NW, FOT \neq PT) =$

$0,0640592 + 0,0158661 = 0,0799253$

$$P(FOT=PT \mid FCV=HC, N=NW) = \frac{P(FCV=HC, N=NW \mid FOT=PT) \cdot P(FOT=PT)}{P(FCV=HC, N=NW)} =$$

$$\frac{0,47\,18143 \cdot 0,1359545}{0,0799253} \cdot 0,74\,84604 =$$

$0,6006884$