

Example 01:

Example 01 shows that the *separation holds but sufficiency does not hold*.

The choice of A, C, Y is:

A = BMI, C = Gender, Y = Hyperlipidemia

The table below shows that $P(A | C, Y) = P(A | Y)$, but $P(A | C, Y) \neq P(A | C)$.

	A = '~18.5'	A = '~24.0'	A = '~28.0'	A = '<18.5'
C= Male, Y = YES	0.1985	0.4696	0.3281	0.0037
C= Male, Y = NO	0.4918	0.3627	0.1195	0.0261
C= Female, Y = YES	0.1985	0.4696	0.3281	0.0037
C= Female, Y = NO	0.4918	0.3627	0.1195	0.0261

	A = '~18.5'	A = '~24.0'	A = '~28.0'	A = '<18.5'
Y = YES	0.1985	0.4696	0.3281	0.0037
Y = NO	0.4918	0.3627	0.1195	0.0261

Example 02:

Example 02 shows that the *sufficiency holds but separation does not hold*.

The choice of A, C, Y is:

A = CentralObesity, C = Hyperlipidemia, Y = Gender

The table below shows that $P(A | C, Y) = P(A | C)$, but $P(A | C, Y) \neq P(A | Y)$.

	A = YES	A = NO
C = YES, Y = Male	0.7877	0.2123
C = YES, Y = Female	0.7877	0.2123
C = NO, Y = Male	0.5832	0.4168
C = NO, Y = Female	0.5832	0.4168

	A = YES	A = NO
C = YES	0.7877	0.2123
C = NO	0.5832	0.4168