Web Page for Chapter 24

SPSS ACTIVITY

Access SPSS Chapter 24 Data File A, and practise logistic regression analysis using *age* and *family size* as predictors for *taking or declining the offer*. Write out an explanation of the results and discuss in class.

REVIEW QUESTION ANSWERS

- Qu. 24.1 (c)
- *Qu. 24.2* (b)
- Qu. 24.3 (d)
- *Qu. 24.4* (d)
- *Qu.* 24.5 (c)

Qu. 24.8 Probability of household of two with \$1,700 mortgage per month taking offer is 82.9% or 82.9% of such householders will take up offer.

If you found difficulty with Qu. 24.8 look at the example below.

ADDITIONAL EXAMPLE

Here is an example of the use of the predictive equation for a new case.

Probability of a case = $\frac{e(2.399 \times \text{family size}) + (.005 \times \text{mortgage}) - 18.627}{1 + e(2.399 \times \text{family size}) + (.005 \times \text{mortgage}) - 18.627}$

Imagine a householder whose household size, including themselves, was two and paying a monthly mortgage of \$3,500. Would they take up the offer, i.e. belong to category 1? Substituting in we get:

Probability of a case taking offer
$$= \frac{e(2.399 \times 2) + (.005 \times 3500) - 18.627}{1 + e(2.399 \times 2) + (.005 \times 3500) - 18.627}$$
$$= \frac{e^{3.671}}{1 + e^{3.671}}$$
$$= .975$$

Therefore, the probability that a householder with two in the household and a mortgage of \$3,500 p.m. will take up the offer is 97.5%, or 97.5% of such individuals will be expected to take up the offer.