MAS8381: Marketing Data Project

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1 Converting the Variables

We started our analysis by deciding whether a variable should be converted into a factor. We decided that if the variable was categorical, only had a small number of values and was unordered then to convert the variable to a factor. Table 1 shows the variables an whether they are used as a factor or not.

Variable	**Used as**
Income	Integer
Sex	Factor with 2 levels
Marital	Factor with 5 levels
Age	Integer
Edu	Factor with 6 levels
Occupation	Factor with 9 levels
Lived	Factor with 5 levels
Dual_Income	Factor with 3 levels
Household	Integer
Householdu18	Integer
Status	Factor with 3 levels
Home_Type	Factor with 5 levels
Ethnic	Factor with 8 levels
Language	Factor with 3 levels

Table 1: variables

2 handling missing data

3 Frequ

4 Bayesian

We start the Bayesian analysis by modelling the saturated model with the missing data handled by just simply omitting it, later on we use the mice method mentioned earlier to handle the missing values. We have chosen to use a vague prior on each of our parameters, β_i, and for the precision, τ. The model string for this is

```
modelstring = "
model {
for (i in 1:n) {
mean[i] =  inprod(X[i,],beta)
y[i]~dnorm(mean[i],tau)
}
for (j in 1:p) {
beta[j]~dnorm(0,0.001)
}
tau~dgamma(1,0.001)
}
"
```