Marketing Campaign for Banks

The input for the bank marketing classification model is 16 variables characterizing a bank customer. The output is 1 if the customer will purchase a term deposit product and 0 otherwise.

The 16 predictors ...  
# Bank client data:  
1 - age (numeric)  
2 - job : type of job (categorical: 'admin.','blue-collar','entrepreneur','housemaid','management','retired','self-employed','services','student','technician','unemployed','unknown')  
3 - marital : marital status (categorical: 'divorced','married','single','unknown'; note: 'divorced' means divorced or widowed)  
4 - education (categorical: 'basic.4y','basic.6y','basic.9y','high.school','illiterate','professional.course','university.degree','unknown')  
5 - default: has credit in default? (categorical: 'no','yes','unknown')  
6 - balance  
7 - housing: has housing loan? (categorical: 'no','yes','unknown')  
8 - loan: has personal loan? (categorical: 'no','yes','unknown')  
# Related to the last contact of the current campaign:  
9 - contact: contact communication type (categorical: 'cellular','telephone')   
10 - day\_of\_week: last contact day of the week (categorical: 'mon','tue','wed','thu','fri')  
11 - month: last contact month of year (categorical: 'jan', 'feb', 'mar', ..., 'nov', 'dec')  
12 - duration: last contact duration, in seconds (numeric). Important note: this attribute highly affects the output target (e.g., if duration=0 then y='no'). Yet, the duration is not known before a call is performed. Also, after the end of the call y is obviously known. Thus, this input should only be included for benchmark purposes and should be discarded if the intention is to have a realistic predictive model.  
# Other attributes:  
13 - campaign: number of contacts performed during this campaign and for this client (numeric, includes last contact)  
14 - pdays: number of days that passed by after the client was last contacted from a previous campaign (numeric; 999 means client was not previously contacted)  
15 - previous: number of contacts performed before this campaign and for this client (numeric)  
16 - poutcome: outcome of the previous marketing campaign (categorical: 'failure','nonexistent','success')