

Marketing based on customer income

Context

Our company has a broad range of products and the marketing department wants to improve their product campaigns based on an individual's income, more specifically to know whether the customer's income is more than \$50k USD.

They have been having issues placing products correctly and that has resulted in a lower number of sales, as well as inventory forecasting issues.

Marketing department states that they could increase sales and alleviate inventory issues if they had this information and could tailor a more targeted campaign for customers.

Problem Identification

Can we identify with an accuracy of 85% or higher if a customer's income is more than \$50k USD to implement by the beginning of next month?

Criteria for success

Build a predictive model with an accuracy of 85% or higher to identify whether a customer's income is more than \$50k by the end of this month.

Scope of solution space

Solution will be applied to our company products.

Constraints

Possible missing values on datasets.

Not knowing what final weight is or how it is calculated.

Stakeholders

Marketing department

Data sources

<https://archive.ics.uci.edu/ml/datasets/adult>

Data will be obtained from the UCI datasets collection, containing information from the 1994 US Census. Information is divided in 2 files: training set 32,561 records and test set with 16,282 records.

Target:

>50K, <=50K.

Features:

age: continuous.

workclass: Private, Self-emp-not-inc, Self-emp-inc, Federal-gov, Local-gov, State-gov, Without-pay, Never-worked.

fnlwgt: continuous.

education: Bachelors, Some-college, 11th, HS-grad, Prof-school, Assoc-acdm, Assoc-voc, 9th, 7th-8th, 12th, Masters, 1st-4th, 10th, Doctorate, 5th-6th, Preschool.

education-num: continuous.

marital-status: Married-civ-spouse, Divorced, Never-married, Separated, Widowed, Married-spouse-absent, Married-AF-spouse.

occupation: Tech-support, Craft-repair, Other-service, Sales, Exec-managerial, Prof-specialty, Handlers-cleaners, Machine-op-inspct, Adm-clerical, Farming-fishing, Transport-moving, Priv-house-serv, Protective-serv, Armed-Forces.

relationship: Wife, Own-child, Husband, Not-in-family, Other-relative, Unmarried.

race: White, Asian-Pac-Islander, Amer-Indian-Eskimo, Other, Black.

sex: Female, Male.

capital-gain: continuous.

capital-loss: continuous.

hours-per-week: continuous.

native-country: United-States, Cambodia, England, Puerto-Rico, Canada, Germany, Outlying-US(Guam-USVI-etc), India, Japan, Greece, South, China, Cuba, Iran, Honduras, Philippines, Italy, Poland, Jamaica, Vietnam, Mexico, Portugal, Ireland, France, Dominican-Republic, Laos, Ecuador, Taiwan, Haiti, Columbia, Hungary, Guatemala, Nicaragua, Scotland, Thailand, Yugoslavia, El-Salvador, Trinidad&Tobago, Peru, Hong, Holand-Netherlands.