

Project: Customer Segmentation

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Problem description

Problem Statement: XYZ bank wants to roll out Christmas offers to their customers. But Bank does not want to roll out same offer to all customers instead they want to roll out personalized offer to particular set of customers. If they manually start understanding the category of customer then this will be not efficient and also, they will not be able to uncover the hidden pattern in the data (pattern which group certain kind of customer in one category). Bank approached ABC analytics company to solve their problem. Bank also shared information with ABC analytics that they don't want **more than 5 group** as this will be inefficient for their campaign.

Business understanding (Customer Segmentation)

We will propose customer segmentation approach to the Bank.

Our goal will be to create models which we use in turn to find a solution

We will adopt three predictive models:

- Clustering models which group similar behavior customer in one category and others in different category.
- Classification or Recommender models to predict group of a customer and which will be used to evaluate quality of the clustering model.

Project lifecycle along with deadline

1. Business Understanding (Week 7)
2. Data Understanding (week 8)
3. EDA (Week 8)
4. Feature Engineering (Week 9)
4. Model Building (Week 10)
5. Model Evaluation (Week 11)
6. Presentation (week 12)
7. Document the challenges (Week 13)

Data source

Data source used is: cust_seg.csv

Data source Link:

<https://drive.google.com/drive/folders/1bfCpJIKmp6lHxiLPWvOS2nU1dc24pViB>

| Column Name | Description |
|-----------------|---|
| fecha_datos | The table is partitioned for this column |
| ncodpers | Customer code |
| ind_empleado | Employee index: A active, B ex employed, F filial, N not employee, P pasive |
| pais_residencia | Customer's Country residence |
| sexo | Customer's sex |
| age | Age |
| fecha_alta | The date in which the customer became as the first holder of a contract in the bank |
| ind_nuevo | New customer Index. 1 if the customer registered in the last 6 months. |
| antiguedad | Customer seniority (in months) |
| indrel | 1 (First/Primary), 99 (Primary customer during the month but not at the end of the month) |
| ult_fec_cli_1t | Last date as primary customer (if he isn't at the end of the month) |
| indrel_1mes | Customer type at the beginning of the month ,1 (First/Primary customer), 2 (co-owner),P (Potential),3 (former primary), 4(former co-owner) |
| tiprel_1mes | Customer relation type at the beginning of the month, A (active), I (inactive), P (former customer),R (Potential) |
| indresi | Residence index (S (Yes) or N (No) if the residence country is the same than the bank country) |
| indext | Foreigner index (S (Yes) or N (No) if the customer's birth country is different than the bank country) |

| | |
|-----------------------|---|
| conyuemp | Spouse index. 1 if the customer is spouse of an employee |
| canal_entrada | channel used by the customer to join |
| indfall | Deceased index. N/S |
| tipodom | Addres type. 1, primary address |
| cod_prov | Province code (customer's address) |
| nomprov | Province name |
| ind_actividad_cliente | Activity index (1, active customer; 0, inactive customer) |
| renta | Gross income of the household |
| ind_ahor_fin_ult1 | Saving Account |
| ind_aval_fin_ult1 | Guarantees |
| ind_cco_fin_ult1 | Current Accounts |
| ind_cder_fin_ult1 | Derivada Account |
| ind_cno_fin_ult1 | Payroll Account |
| ind_ctju_fin_ult1 | Junior Account |
| ind_ctma_fin_ult1 | Más particular Account |
| ind_ctop_fin_ult1 | particular Account |
| ind_ctpp_fin_ult1 | particular Plus Account |
| ind_deco_fin_ult1 | Short-term deposits |
| ind_deme_fin_ult1 | Medium-term deposits |
| ind_dela_fin_ult1 | Long-term deposits |
| ind_ecue_fin_ult1 | e-account |
| ind_fond_fin_ult1 | Funds |
| ind_hip_fin_ult1 | Mortgage |
| ind_plan_fin_ult1 | Pensions |
| ind_pres_fin_ult1 | Loans |
| ind_reca_fin_ult1 | Taxes |
| ind_tjcr_fin_ult1 | Credit Card |
| ind_valo_fin_ult1 | Securities |
| ind_viv_fin_ult1 | Home Account |
| ind_nomina_ult1 | Payroll |
| ind_nom_pens_ult1 | Pensions |
| ind_recibo_ult1 | Direct Debit |

