# Sharing Economy and Big Data Analytics

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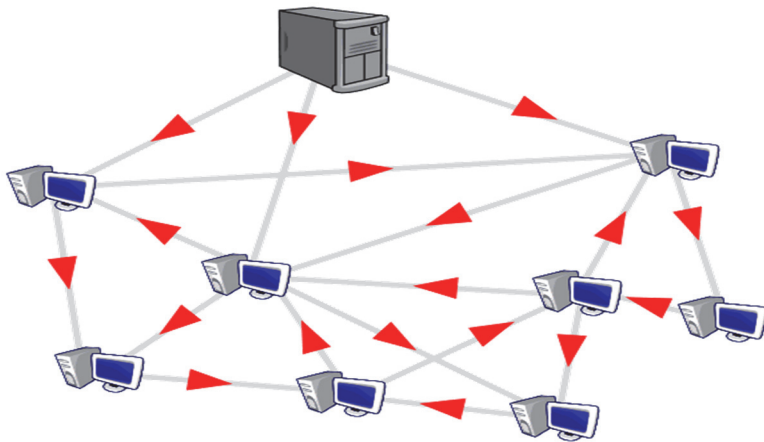Mounia Khelfaoui

Color section

**Figure 1.1.** *P2P diagram (Evroux et al. 2014)*



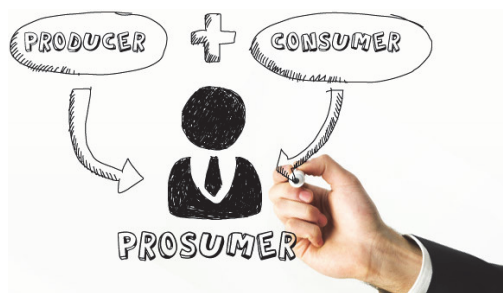**Figure 2.1.** *Prosumer[1]*

[1] Source: https://www.linkedin.com/pulse/entenda-o-prosumer-esse-novo-consumidor-jurandir-si queira.
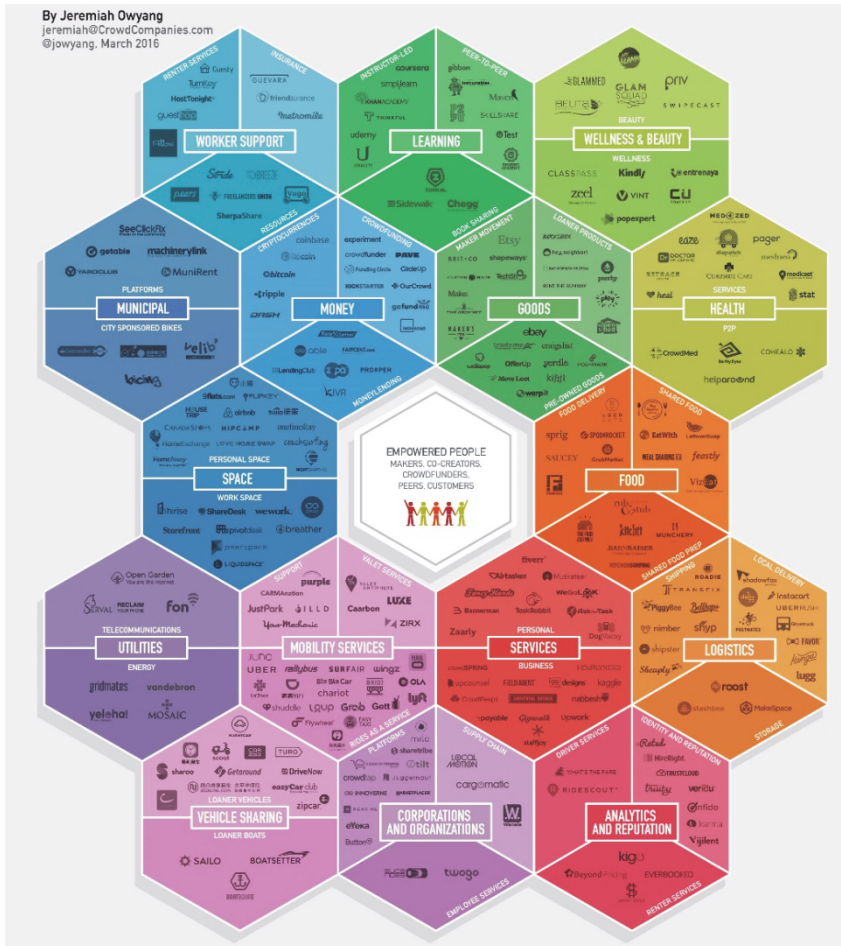
**Figure 2.2.** *Honeycomb representation of the collaborative economy (Owyang 2016)*
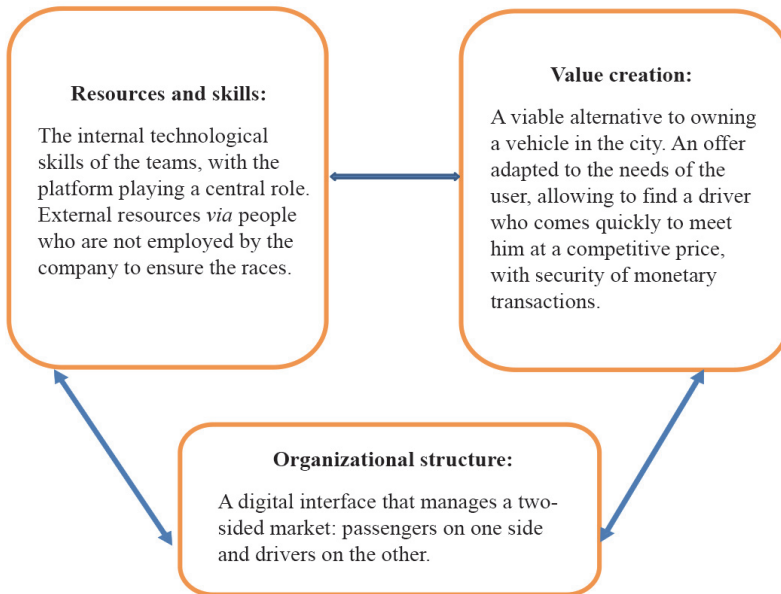
**Figure 3.1.** *Uber's business model (Diridollou et al. 2016)*
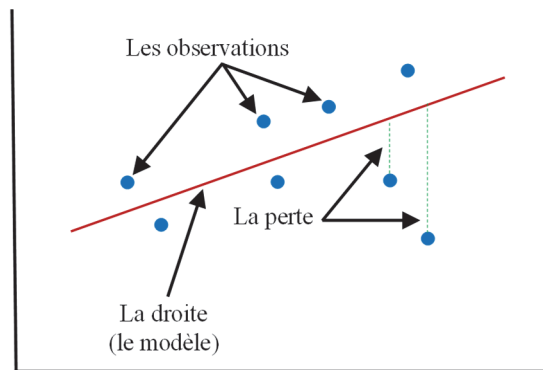


**Figure 5.1.** *Nature and types of data*

**Figure 9.1.** *Difference between model and reality*

**Figure 9.5.** *The emptiness of the function for all variables*

| | id | name | host_id | host_name | neighbourhood_group | neighbourhood | latitude | longitude | room_type | price |
|---|---|---|---|---|---|---|---|---|---|---|
| 47118 | 24441452 | Audacity & Chic close to Montmartre | 184585722 | Sandra | NaN | Élysée | 48.881951 | 2.326527 | Private room | 25000 |
| 47117 | 24441436 | Audacity & Chic in Paris 9th - Chambre Uno | 184585722 | Sandra | NaN | Élysée | 48.881508 | 2.326565 | Private room | 25000 |
| 47120 | 24441474 | Audacity & Chic close to the Sacré Cœur | 184585722 | Sandra | NaN | Opéra | 48.881448 | 2.328070 | Private room | 25000 |
| 14852 | 7225849 | Artistic apartment, Montmartre | 34063120 | Martin | NaN | Buttes-Montmartre | 48.890107 | 2.346739 | Entire home/apt | 9379 |
| 53787 | 27608896 | Petit studio parisien | 170409506 | Salma | NaN | Observatoire | 48.832456 | 2.323958 | Private room | 8803 |
| 49042 | 25448670 | cosytiti Paris 15 | 75744897 | Anne | NaN | Vaugirard | 48.838110 | 2.297415 | Entire home/apt | 8576 |
| 11597 | 6088687 | Lovely Duplex 30m2 - Le Marais | 2071795 | Mathilde | NaN | Temple | 48.865385 | 2.353980 | Entire home/apt | 8500 |
| 19064 | 9442661 | Lively studette in 19th district | 2865311 | Léo | NaN | Buttes-Chaumont | 48.877121 | 2.386713 | Entire home/apt | 5000 |
| 4847 | 2344562 | 1 room Apartment | 1882417 | Laurent | NaN | Gobelins | 48.834035 | 2.361325 | Entire home/apt | 5000 |

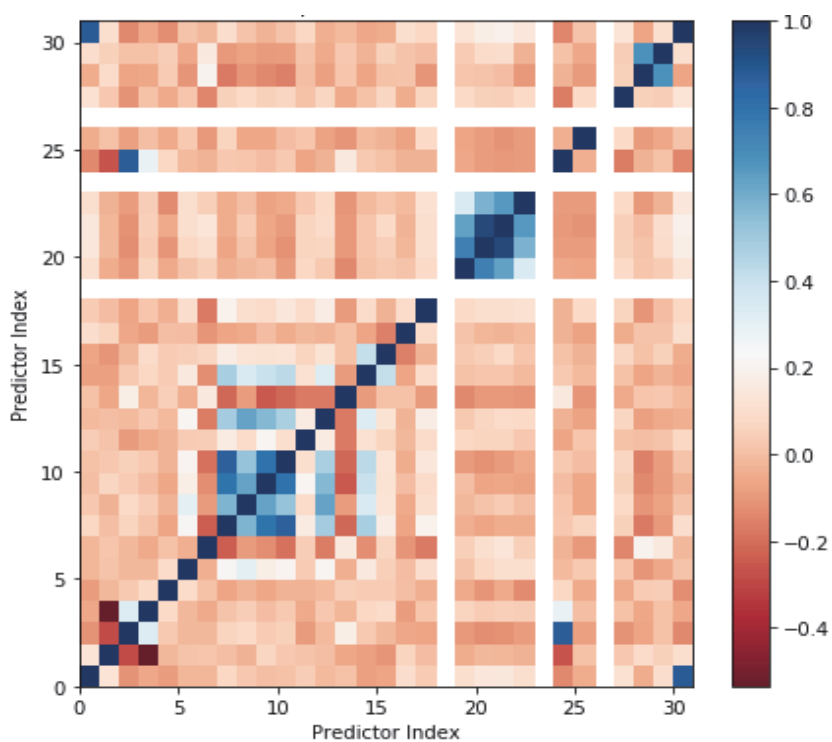**Figure 9.6.** *Apartment prices in descending order*

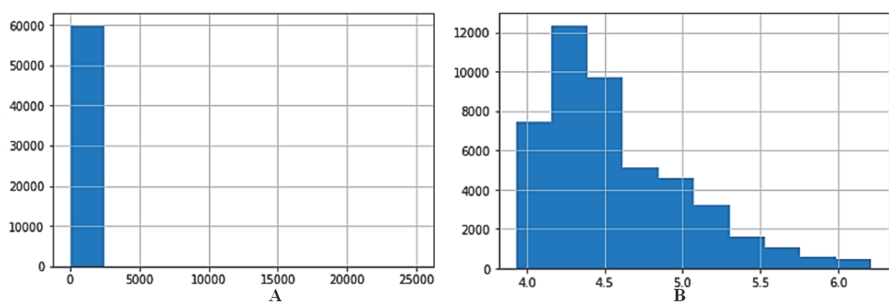**Figure 9.7.** *Correlation matrix*



**Figure 9.8.** *Price distribution*
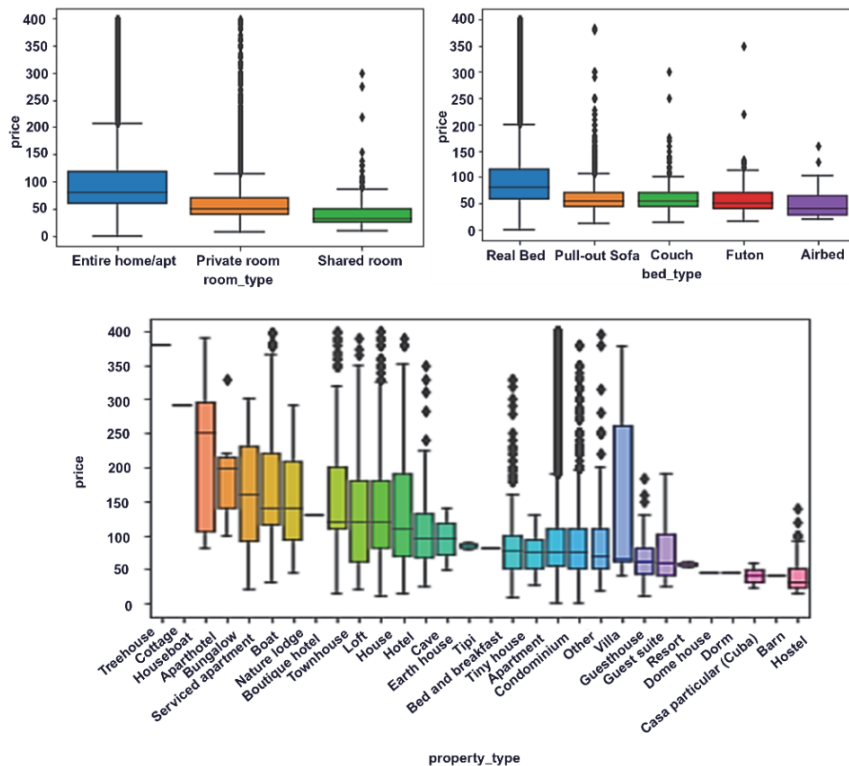
**Figure 9.9.** *Apartment prices as a function of certain characteristics*
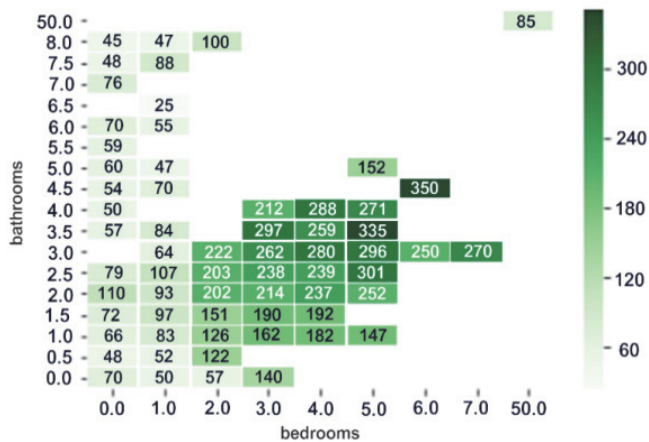
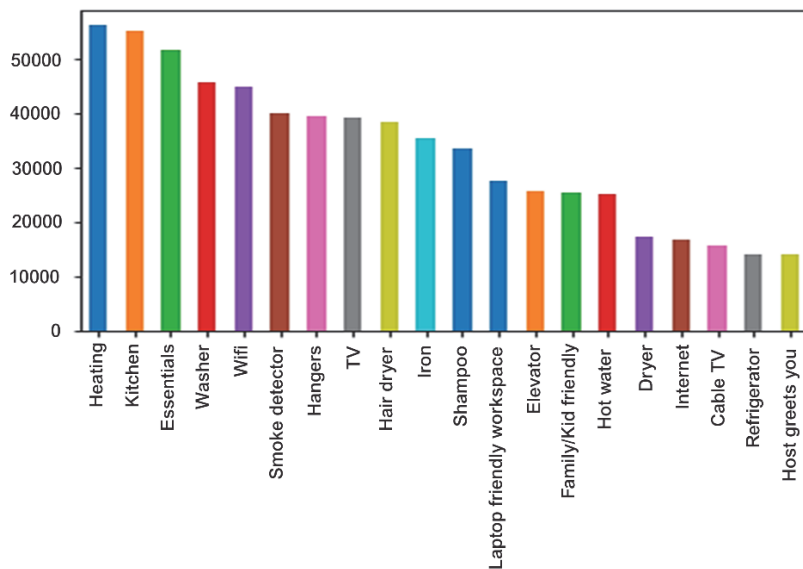**Figure 9.10.** *Price per number of bedrooms/bathrooms*



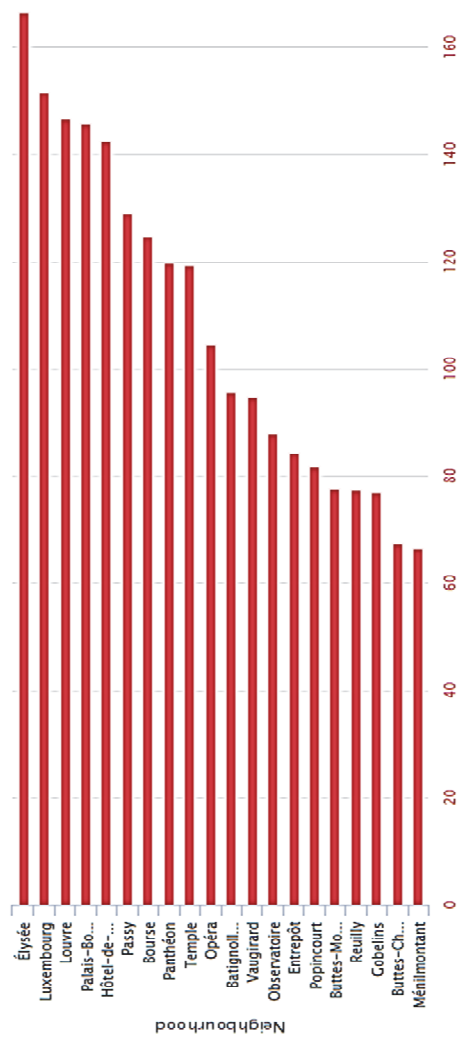**Figure 9.11.** *Distribution of prices as a function of amenities*
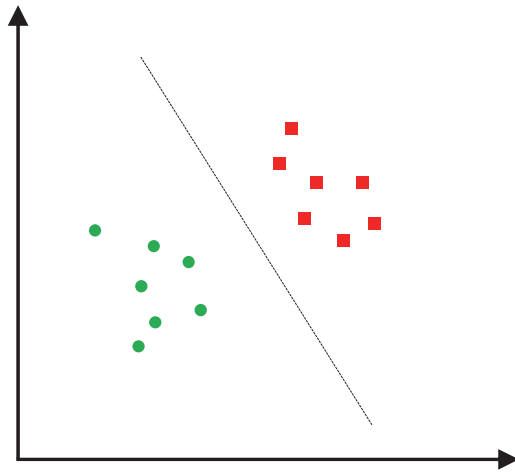
**Figure 9.12.** *The price/neighborhood relationship*

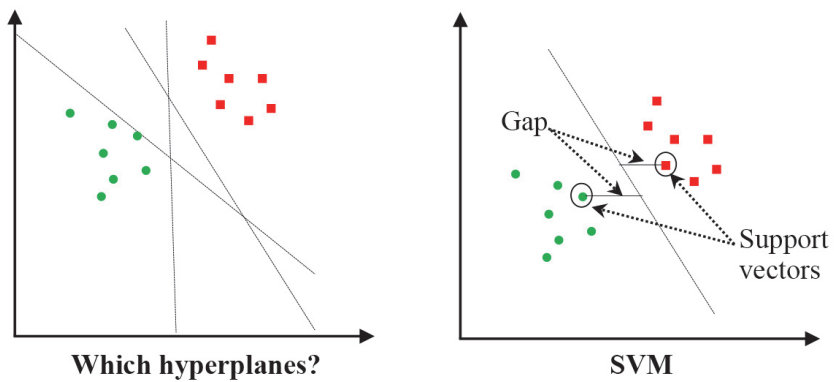**Figure 10.2.** *Coordinates of entities divided into two classes*



**Which hyperplanes?**



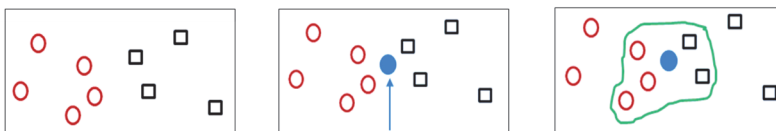Gap

Support vectors

**SVM**

**Figure 10.3.** *How SVM works*
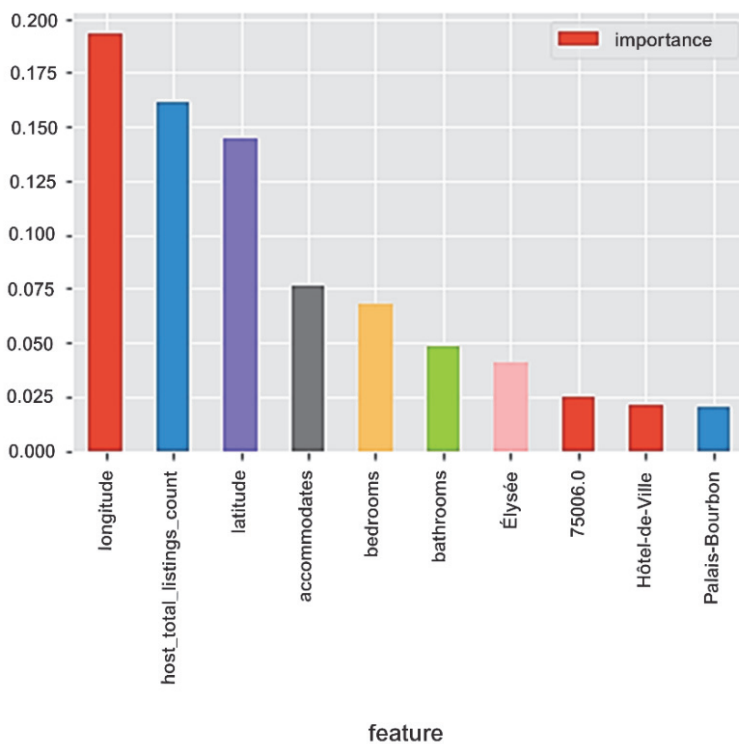
**Figure 10.4.** *How does kNN work?*



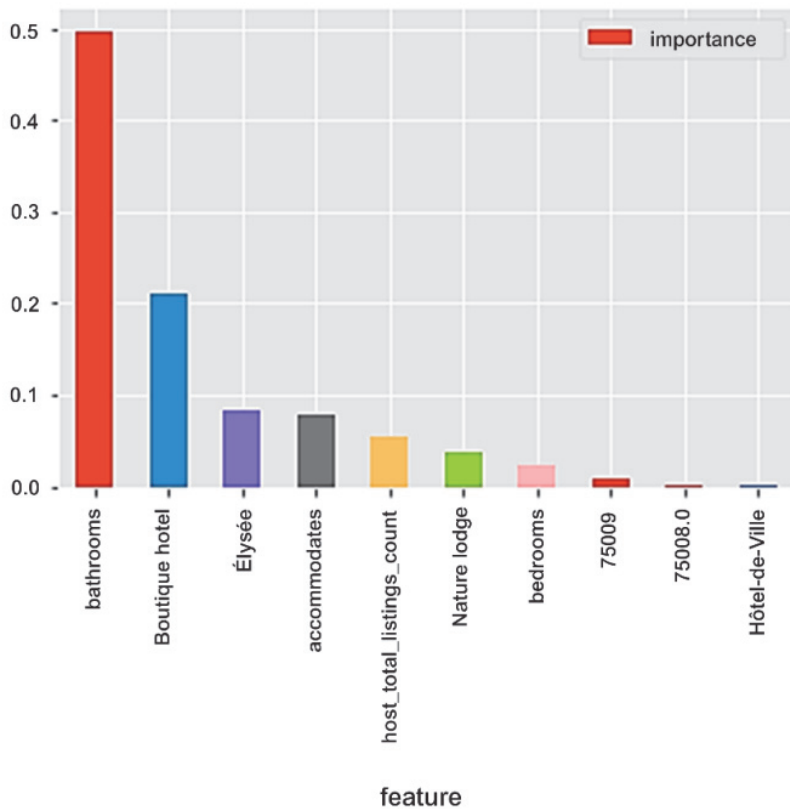**Figure 10.6.** *The 10 most important features (decision tree)*

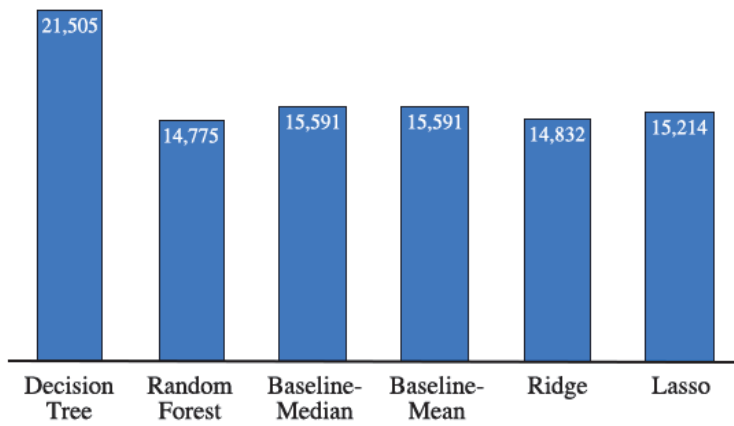**Figure 10.7.** *The 10 most important features (Random Forest)*
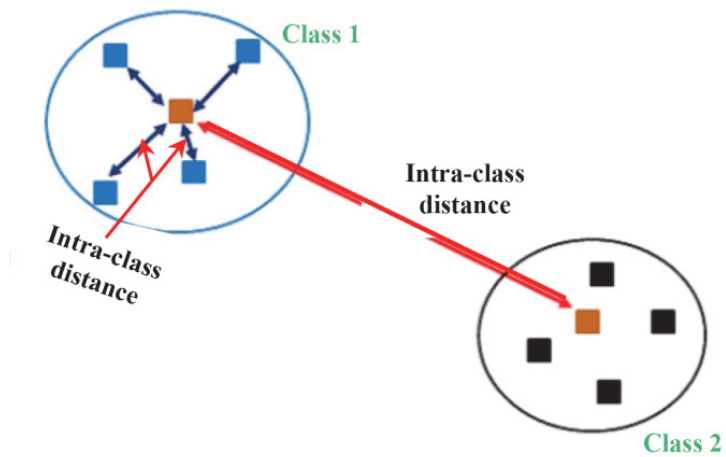
**Figure 10.8.** *RMSE: score for the different models*



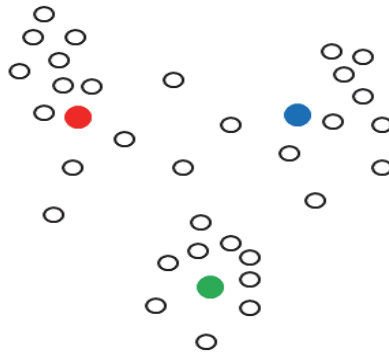**Figure 11.2.** *The principle of clustering*

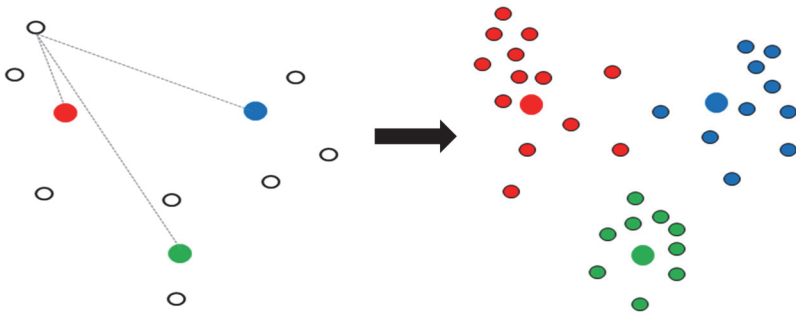**Figure 11.3.** *Step 1: define the initial points for the centroids*



**Figure 11.4.** *Step 2: assign each point to the nearest centroid*
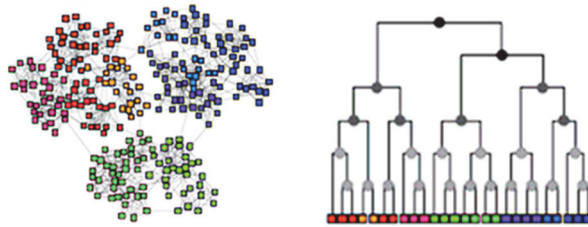
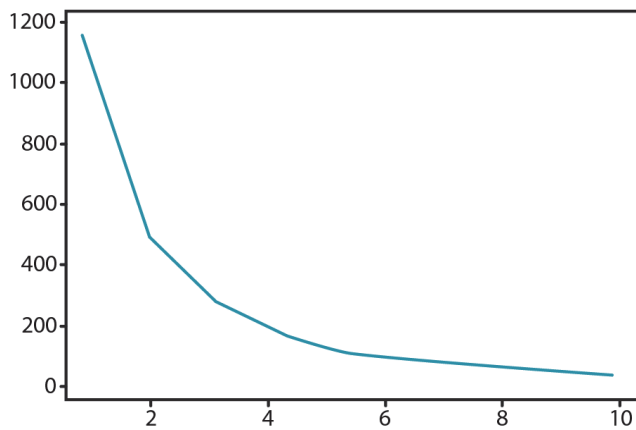**Figure 11.5.** *K-means versus hierarchical classification*



**Figure 11.7.** *Determination of the number of clusters using the elbow method*

**Figure 11.8.** *The three clusters*