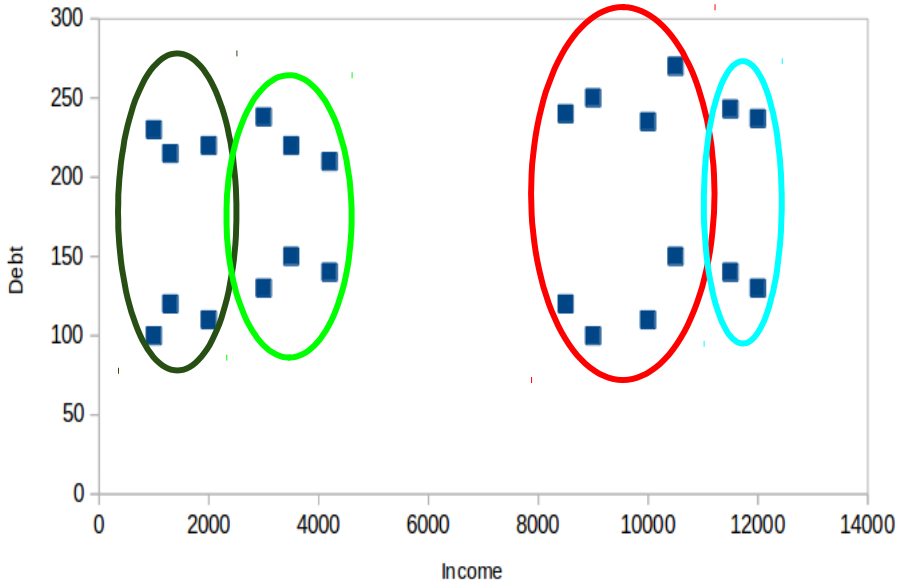
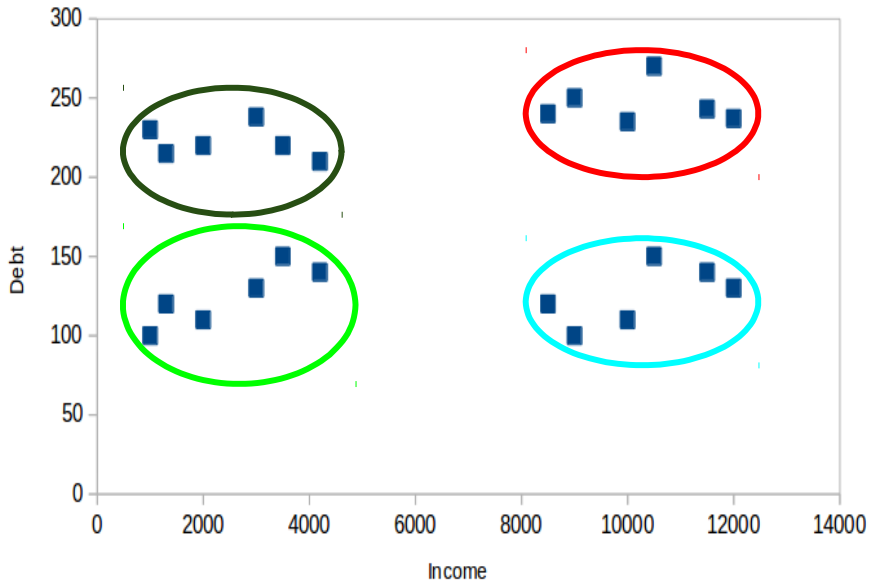
Evaluation metrics for Clustering

Evaluation metrics for Clustering



Case - I



Case - II

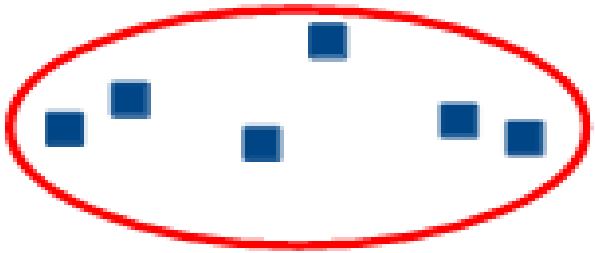
Evaluation metrics for Clustering

- Income
- Occupation
- Gender
- Debt
- Age
- Credit Score
- City of residence
- Marital Status

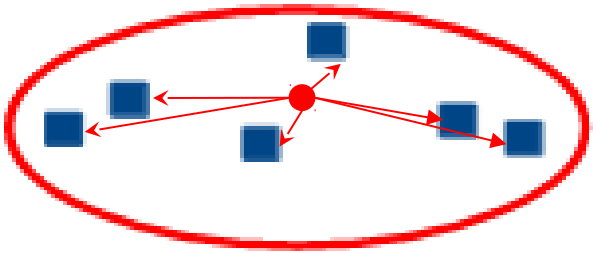
Evaluation metrics for Clustering

1. Inertia

Inertia



Inertia



Intra cluster distance

Inertia

Lesser inertia  Better Clusters

Inertia

1. Inertia

$$\text{Inertia} = \sum_{i=1}^{m} \sum_{k=1}^{K} w_{ik} (||x_i - \mu_k||)^2$$

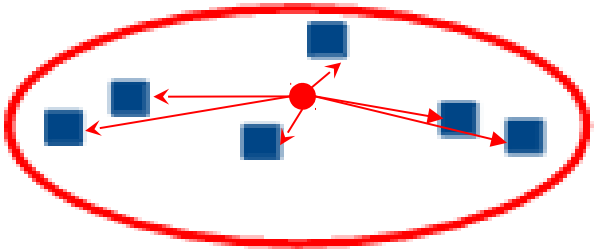
- $w_{ik} = 1$, if x_i belongs to cluster k
- $w_{ik} = 0$, if x_i does not belong to cluster k

Evaluation metrics for Clustering

1. Inertia

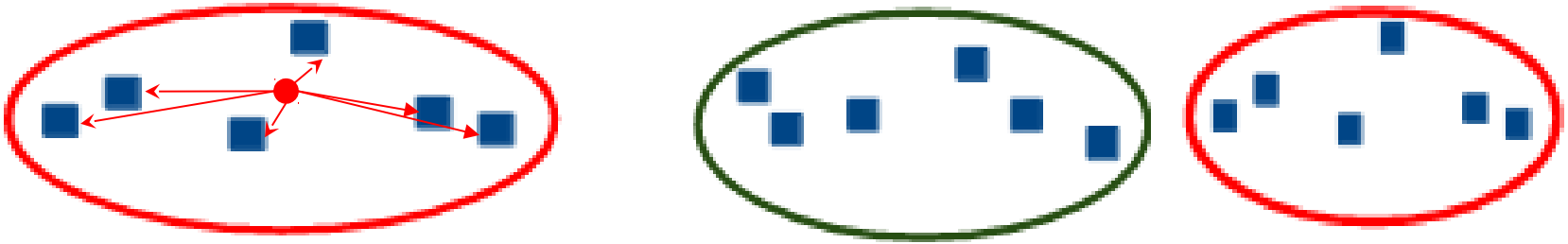
2. Dunn Index

Evaluation metrics for Clustering



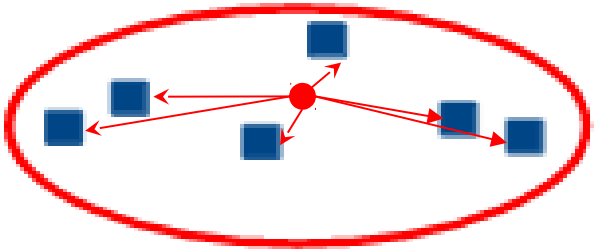
Intra cluster distance

Evaluation metrics for Clustering

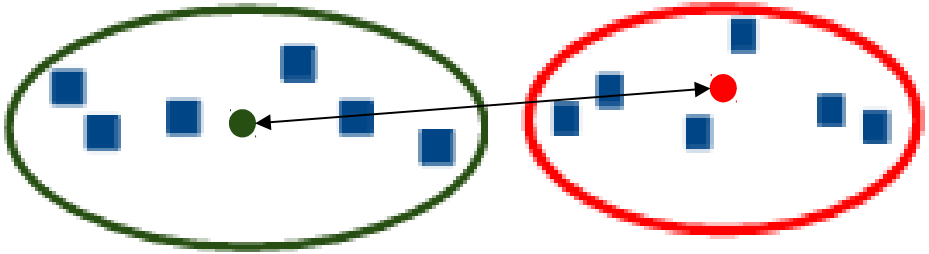


Intra cluster distance

Evaluation metrics for Clustering



Intra cluster distance



Inter cluster distance

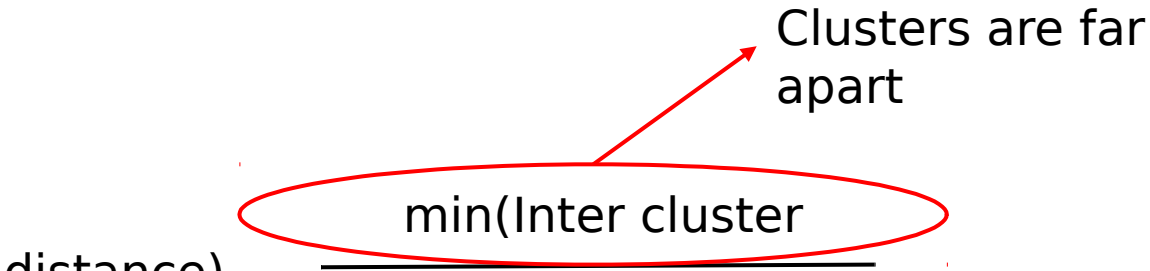
Dunn Index

$$\text{Dunn Index} = \frac{\min(\text{Inter cluster distance})}{\max(\text{Intra cluster distance})}$$

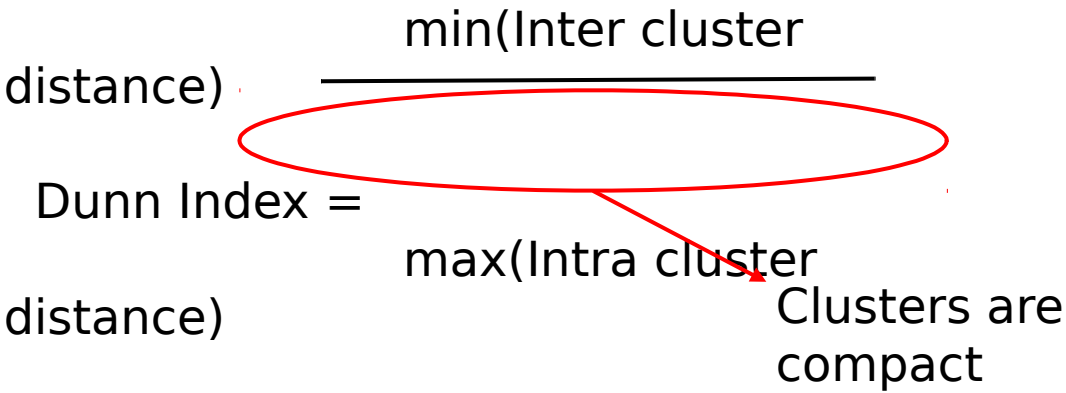
Dunn Index

More Dunn index  Better Clusters

Dunn Index



Dunn Index



Thank
You!

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