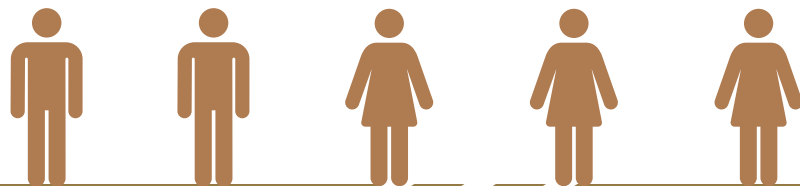


# Qui sont vos clients ?





# Échantillon de 200 clients avec 5 données

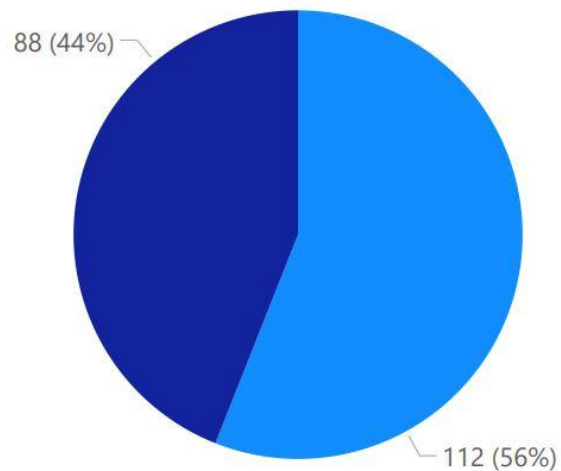
CustomerID / Sexe / Âge

Salaire annuel en k\$

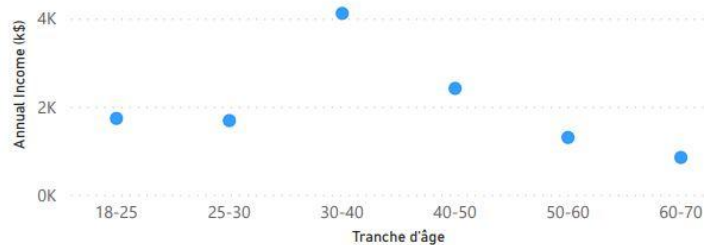
Score (entre 1 et 99) (assigné en fonction du comportement des clients et de la nature des dépenses)



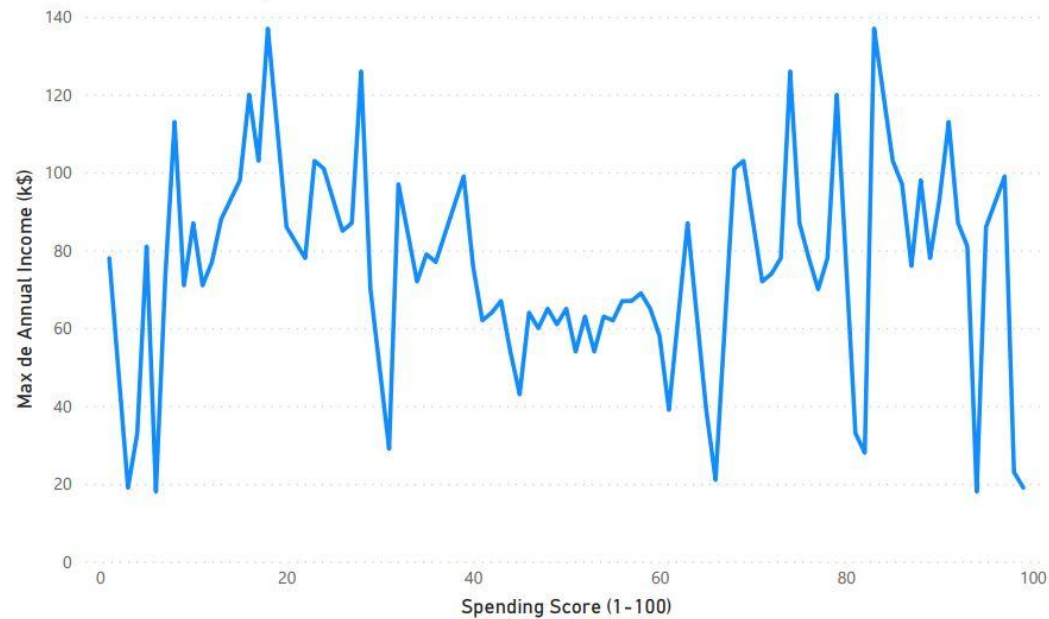
Gender ● Female ● Male



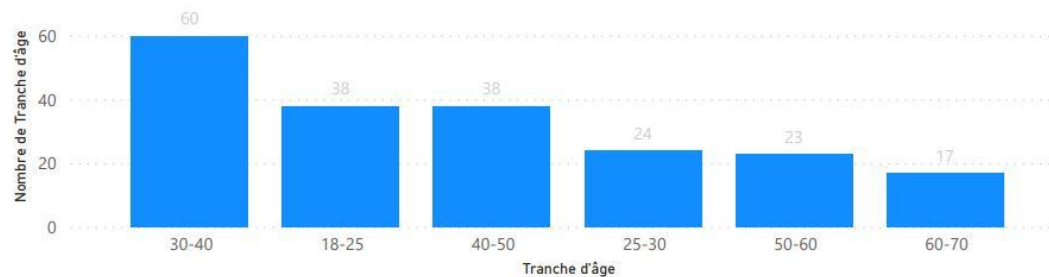
Salaire annuel (K\$) par tranche d'âge

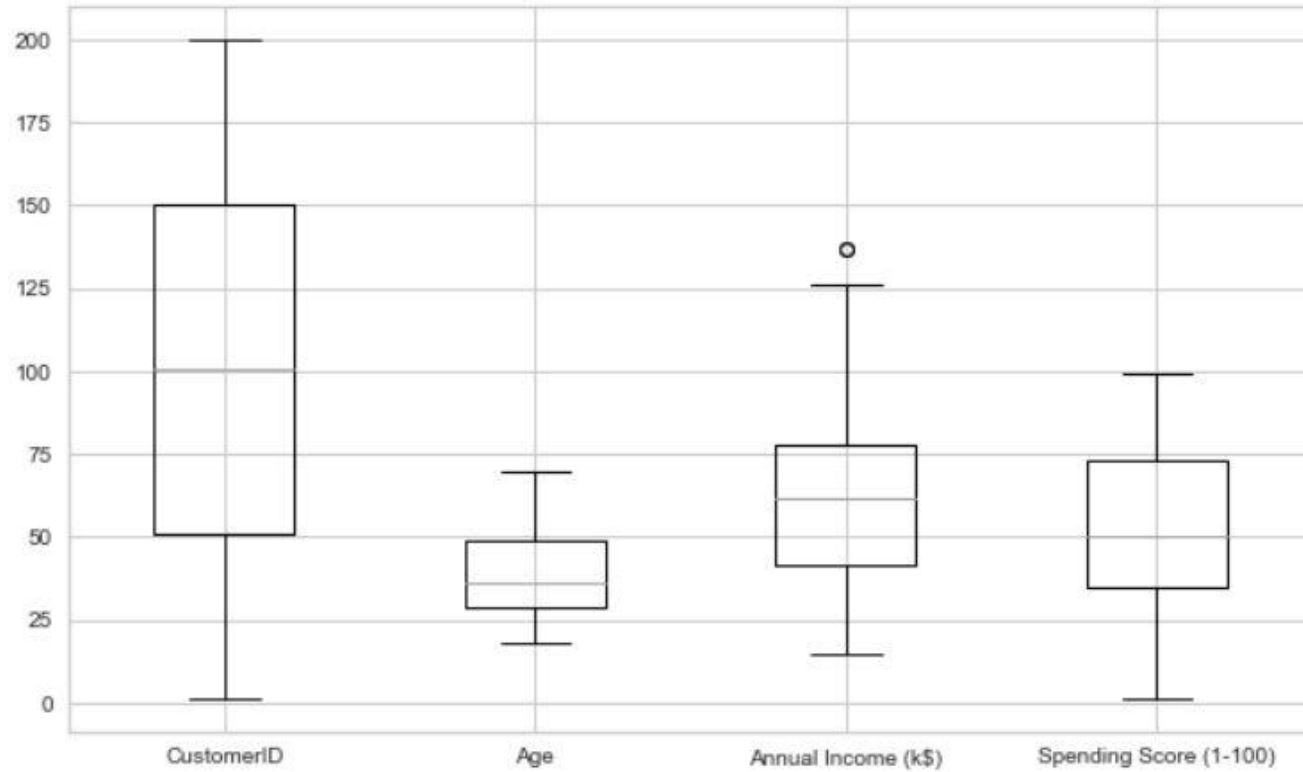


Max salaire annuel (K\$) par du score



Nombres de clients par tranche d'âge





Vos données n'ont pas de valeurs aberrantes, ni outliers



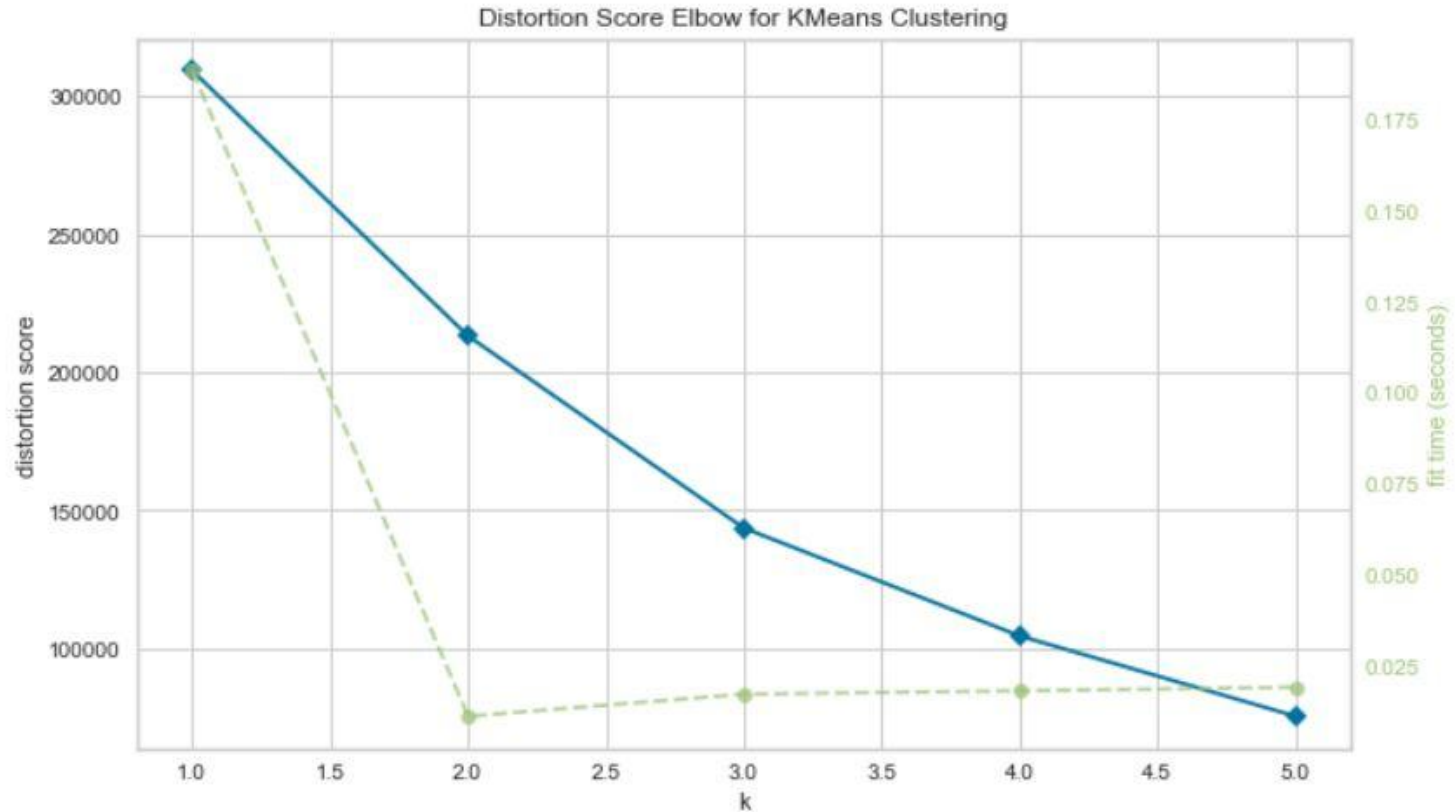
Nos différentes techniques de segmentation

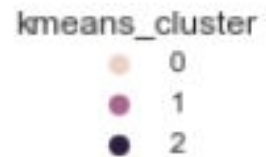
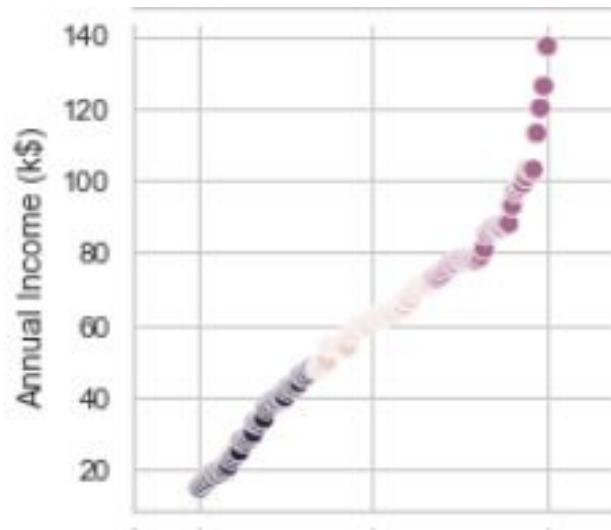
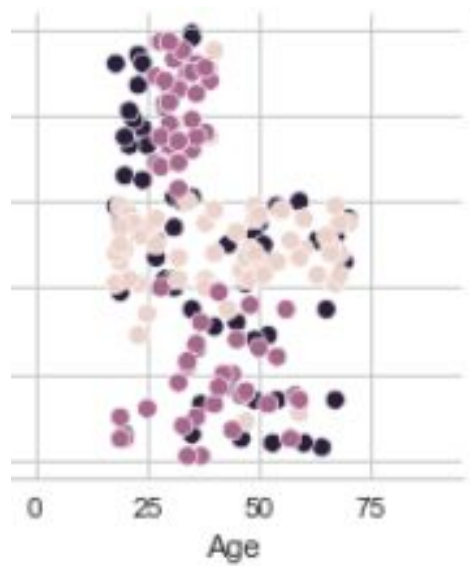
KMEANS

**Silhouette score : 0.58**



# Visualisation Elbow





## Trois clusters par rapport principalement à Annual Income (k\$)

- Cluster 0: en moyenne 31K, varie entre 15K / 48K
- Cluster 1: en moyenne 60K, varie entre 48K / 72K
- Cluster 2: en moyenne 90K, varie entre 73K / 137K



## CLUSTER 1

	CustomerID	Gender	Age	Annual Income (k\$)	Spending Score (1-100)	kmeans_cluster
count	61.000000	61.000000	61.000000	61.000000	61.000000	61.0
mean	31.016393	0.393443	36.918033	30.360656	49.737705	0.0
std	17.781537	0.492568	14.296031	9.904600	27.427420	0.0
min	1.000000	0.000000	18.000000	15.000000	3.000000	0.0
25%	16.000000	0.000000	24.000000	20.000000	31.000000	0.0
50%	31.000000	0.000000	35.000000	30.000000	50.000000	0.0
75%	46.000000	1.000000	49.000000	39.000000	73.000000	0.0
max	62.000000	1.000000	69.000000	46.000000	99.000000	0.0

	CustomerID	Gender	Age	Annual Income (k\$)	Spending Score (1-100)	kmeans_cluster
count	67.000000	67.000000	67.000000	67.000000	67.000000	67.0
mean	101.000000	0.447761	41.910448	60.805970	50.298507	1.0
std	19.485037	0.501017	15.981743	6.825174	13.609283	0.0
min	68.000000	0.000000	18.000000	48.000000	9.000000	1.0
25%	84.500000	0.000000	26.500000	54.000000	43.000000	1.0
50%	101.000000	0.000000	40.000000	62.000000	49.000000	1.0
75%	117.500000	1.000000	52.500000	65.000000	55.500000	1.0
max	134.000000	1.000000	70.000000	72.000000	95.000000	1.0

## CLUSTER 2

	CustomerID	Gender	Age	Annual Income (k\$)	Spending Score (1-100)	kmeans_cluster
count	66.000000	66.000000	66.000000	66.000000	66.000000	66.0
mean	167.500000	0.469697	36.287879	89.424242	50.136364	1.0
std	19.196354	0.502905	9.110881	16.000058	33.999496	0.0
min	135.000000	0.000000	19.000000	73.000000	1.000000	1.0
25%	151.250000	0.000000	30.000000	78.000000	16.250000	1.0
50%	167.500000	0.000000	34.000000	86.000000	51.500000	1.0
75%	183.750000	1.000000	41.000000	98.000000	84.500000	1.0
max	200.000000	1.000000	59.000000	137.000000	97.000000	1.0

## CLUSTER 3

	CustomerID	Gender	Age	Annual Income (k\$)	Spending Score (1-100)	kmeans_cluster
count	67.000000	67.000000	67.000000	67.000000	67.000000	67.0
mean	34.000000	0.402985	38.313433	31.880597	50.164179	2.0
std	19.485037	0.494200	15.323985	10.633740	26.210452	0.0
min	1.000000	0.000000	18.000000	15.000000	3.000000	2.0
25%	17.500000	0.000000	24.000000	21.000000	33.500000	2.0
50%	34.000000	0.000000	35.000000	33.000000	51.000000	2.0
75%	50.500000	1.000000	50.000000	41.000000	73.000000	2.0
max	67.000000	1.000000	70.000000	48.000000	99.000000	2.0