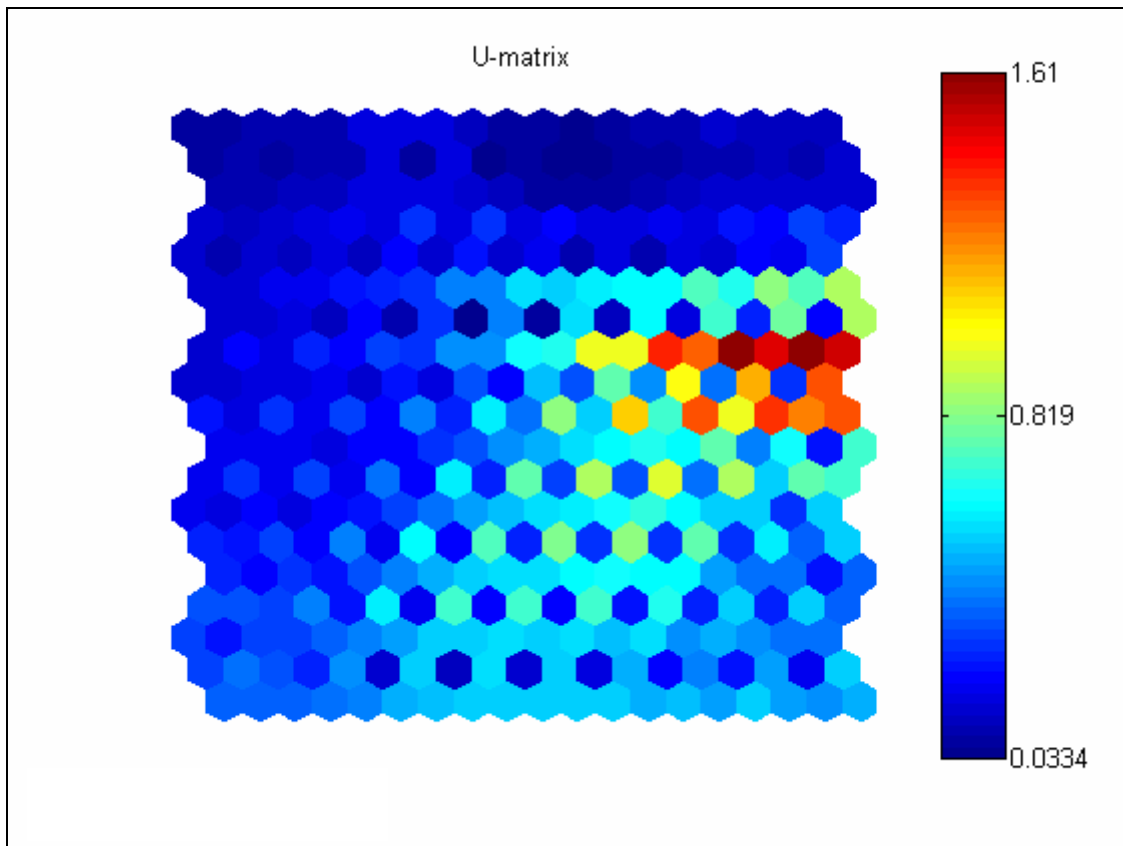


Figure 1: U-Matrix in a SOM of 10x10 topology and employing the risk/return attributes (Group I)



The U-matrix visualizes distances between neighbouring map units, and helps to see the cluster structure of the map. The high values of the U-matrix (red and yellow colours) indicate a cluster border. The elements in the same clusters are indicated by uniform areas of low values (blue colour).

Table 1: Requisites for the official classification (CNMV)

Denomination in the paper	Category	Percentage invested in Treasury Bills and Bonds	Average Duration of Bonds	Percentage invested in stocks.	Proportion invested in currencies different from euro.	Proportion of asset traded in OTC markets.
I	FIAMM	100	< 1,5 years	-	> 5%	< 5%
II	FIM R.F short term	100	< 2 years	0 %	< 5%	< 10%
III	FIM R.F long term	100	> 2 years	0 %	< 5%	< 10%
IV	FIM R.F. International	100	-	0 %	> 5%	< 10%
V	FIM R.V. National	< 25%	-	> 75%	< 30%	< 10%
VI	FIM R.V. Euro	< 25%	-	> 75%	< 30%	< 10%
VII	FIM R.V. International	< 25%	-	> 75%	< 30%	< 10%
VIII	FIM R.F.M.	>70%	-	< 30%	< 5%	< 10%
IX	FIM R.V.M.	< 70%	-	30-75%	< 30%	< 10%
X	FIM R.F.M. International	> 70%	-	< 30%	> 5%	< 10%
XI	FIM R.VM. International	< 70%	-	30-75%	> 30%	< 10%
XII	FIM.R.F Insured	They ensure a profit at the end of some time period. This return can be fix (FIM RF INSURED) or variable (FIM RV INSURED)				
XIII	FIM R.V. Insured					
XIV	Global Mutual Funds	They do not have any explicit restriction from the CNMV. They usually are characterize by a high level of risk exposition				

This table shows the mainly characteristics and requirements of the different categories of Spanish mutual funds. In the first column a shorter name is established to be able to recognize each mutual fund category a long the paper.

Tabla 2: Mainly statistics of mutual funds categories

	return	return3	risk	risk3	skewness	kurtosis	Max. Losses	Max. Returns	Number of Funds	Represen- tativity	Test Normality
I	2.29	8.85	0.13	0.18	-0.20	6.53	0.01	0.10	124	80.52	78.23
II	-11.67	-21.30	11.64	12.82	-0.32	4.55	-3.61	2.78	57	58.76	94.74
III	2.07	8.69	1.00	1.01	-0.18	5.96	-0.20	0.29	129	70.88	88.37
IV	3.60	11.79	1.23	1.42	0.09	6.53	-0.29	0.42	150	70.42	98.00
V	-3.39	-4.17	5.20	4.90	-0.25	4.25	-1.33	1.11	121	73.78	84.30
VI	-3.62	-3.44	4.69	5.00	-0.21	4.61	-1.32	1.17	53	64.63	77.36
VII	-24.17	-39.25	24.33	20.16	-0.21	4.23	-5.57	4.43	71	76.34	94.37
VIII	-0.43	-2.76	3.36	5.11	-0.59	8.15	-1.45	1.16	274	74.66	97.08
IX	-7.59	-15.63	11.95	11.53	-0.34	6.33	-3.27	2.46	36	39.13	94.44
X	-27.57	-47.36	25.64	24.54	-0.13	3.78	-6.73	5.39	204	52.99	74.51
XI	-16.41	-28.43	16.45	15.08	-0.25	3.85	-4.15	3.31	100	52.91	85.00
XII	-15.95	-27.90	14.27	13.14	-0.23	3.79	-3.66	2.86	76	79.17	73.68
XIII	-10.83	-14.29	9.21	9.64	-0.14	3.75	-2.58	2.17	48	84.21	60.42
XIV	3.11	12.30	2.14	2.31	-0.16	4.39	-0.52	0.63	149	91.98	91.28

The Table shows the mainly characteristics of the mutual funds in the database: the mean return for the last year (return), the mean return for the whole time span (return3), the risk for the last year (risk) and for the whole time span (risk3), the skewness, the kurtosis, the five per cent highest profits and losses for the last three years, the number of mutual funds in each category, the percentage that our data represents from total number of mutual funds in Spanish market, and the last column represents the percentage of funds that rejects (at ten percent of significativity) the null hypothesis of normality from a Jarque-Bera test.

Table 3.1: Percentage of mutual funds correctly classified according to knn clustering with 1 neighbour. (Employing the attributes of Group I).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	82.26	0.81	12.10	4.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
II	3.51	8.77	1.75	3.51	7.02	3.51	7.02	14.04	3.51	17.54	5.26	12.28	10.53	1.75
III	17.05	0.00	46.51	17.05	3.10	0.00	0.00	0.78	0.00	0.78	0.78	0.00	0.78	13.18
IV	2.67	0.67	11.33	58.00	4.00	0.00	0.00	5.33	0.00	0.00	0.00	0.00	0.00	18.00
V	0.00	2.48	3.31	5.79	36.36	11.57	4.96	19.01	0.83	0.00	4.13	3.31	4.96	3.31
VI	0.00	3.77	0.00	1.89	28.30	24.53	1.89	13.21	3.77	0.00	3.77	3.77	7.55	7.55
VII	0.00	2.82	1.41	0.00	7.04	1.41	43.66	8.45	0.00	23.94	4.23	4.23	2.82	0.00
VIII	0.00	3.65	0.73	2.19	9.12	1.82	2.19	66.42	5.47	1.82	1.46	1.82	0.73	2.55
IX	0.00	2.78	0.00	2.78	8.33	2.78	0.00	38.89	11.11	22.22	8.33	2.78	0.00	0.00
X	0.00	4.90	0.98	0.00	0.00	0.00	8.82	0.98	5.88	66.18	6.86	3.43	1.96	0.00
XI	0.00	2.00	0.00	0.00	6.00	2.00	4.00	4.00	2.00	16.00	31.00	26.00	7.00	0.00
XII	0.00	9.21	0.00	0.00	6.58	1.32	3.95	2.63	1.32	6.58	31.58	35.53	0.00	1.32
XIII	0.00	8.33	2.08	2.08	12.50	6.25	0.00	8.33	0.00	6.25	12.50	6.25	29.17	6.25
XIV	0.00	0.00	11.41	20.13	2.68	2.01	0.00	5.37	0.67	0.00	0.00	0.00	3.36	54.36

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 3.2: Percentage of mutual funds correctly classified according to knn clustering to the attributes of Group I (with 5 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	87.90	0.00	10.48	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	7.02	3.51	0.00	1.75	5.26	1.75	1.75	17.54	1.75	19.30	14.04	15.79	5.26	5.26
III	17.05	0.00	53.49	11.63	1.55	0.00	0.00	0.78	0.78	0.78	0.78	0.00	0.00	13.18
IV	2.00	0.00	10.00	59.33	2.67	0.00	0.00	6.00	0.00	0.00	0.00	0.00	0.00	20.00
V	0.00	1.65	4.13	4.96	43.80	8.26	2.48	20.66	0.00	0.00	4.96	0.83	3.31	4.96
VI	0.00	1.89	0.00	0.00	45.28	16.98	3.77	16.98	0.00	0.00	3.77	0.00	5.66	5.66
VII	0.00	0.00	1.41	0.00	8.45	2.82	45.07	4.23	0.00	26.76	5.63	2.82	2.82	0.00
VIII	0.00	1.09	0.73	1.46	7.30	2.19	2.19	77.74	1.09	1.82	0.00	1.09	2.55	0.73
IX	0.00	2.78	2.78	0.00	2.78	2.78	0.00	52.78	2.78	27.78	2.78	2.78	0.00	0.00
X	0.00	2.45	0.00	0.00	0.00	0.00	5.39	1.96	1.47	80.88	2.45	3.43	1.47	0.49
XI	0.00	2.00	0.00	0.00	9.00	1.00	2.00	3.00	0.00	19.00	39.00	20.00	5.00	0.00
XII	0.00	3.95	0.00	0.00	6.58	2.63	0.00	3.95	0.00	10.53	34.21	35.53	2.63	0.00
XIII	0.00	6.25	2.08	0.00	18.75	4.17	0.00	2.08	0.00	8.33	12.50	4.17	25.00	16.67
XIV	0.00	0.00	14.09	18.79	3.36	0.67	0.00	4.03	0.00	0.00	0.00	0.00	4.70	54.36

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 3.3: Percentage of mutual funds correctly classified according to knn clustering to the attributes of Group I (with 10 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	87.90	0.00	11.29	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	7.02	0.00	0.00	1.75	3.51	0.00	1.75	19.30	0.00	22.81	17.54	15.79	5.26	5.26
III	13.95	0.00	55.81	13.18	0.78	0.00	0.00	1.55	0.00	0.78	0.78	0.00	0.00	13.18
IV	3.33	0.00	12.67	60.00	0.00	0.67	0.00	6.67	0.00	0.00	0.00	0.00	0.00	16.67
V	0.00	0.00	4.96	6.61	47.11	8.26	0.83	19.83	0.00	0.00	4.96	0.83	4.13	2.48
VI	0.00	0.00	0.00	1.89	50.94	9.43	3.77	20.75	0.00	0.00	0.00	0.00	7.55	5.66
VII	0.00	0.00	1.41	0.00	5.63	5.63	39.44	4.23	0.00	29.58	8.45	2.82	2.82	0.00
VIII	0.00	0.36	1.46	1.09	5.84	0.73	1.46	82.12	0.00	2.55	0.36	0.36	1.82	1.82
IX	0.00	0.00	0.00	5.56	0.00	2.78	0.00	52.78	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.98	0.00	0.49	0.00	0.00	6.86	0.49	0.00	81.37	4.90	3.92	0.49	0.49
XI	0.00	1.00	0.00	1.00	11.00	1.00	1.00	3.00	0.00	19.00	40.00	20.00	2.00	1.00
XII	0.00	1.32	0.00	0.00	10.53	1.32	0.00	1.32	0.00	13.16	42.11	26.32	3.95	0.00
XIII	0.00	0.00	2.08	0.00	20.83	2.08	0.00	4.17	0.00	10.42	16.67	10.42	14.58	18.75
XIV	0.00	0.67	14.09	18.79	0.67	2.01	0.00	2.68	0.00	0.00	0.00	0.00	2.68	58.39

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 3.4: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group I (with 15 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	88.71	0.00	10.48	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	7.02	0.00	0.00	1.75	7.02	0.00	1.75	19.30	0.00	19.30	19.30	15.79	5.26	3.51
III	18.60	0.00	50.39	14.73	0.78	0.00	0.00	1.55	0.00	0.78	0.78	0.00	0.00	12.40
IV	3.33	0.00	16.00	50.67	0.00	0.67	0.00	6.67	0.00	0.00	0.00	0.00	0.00	22.67
V	0.00	0.00	4.96	4.96	47.11	6.61	0.83	23.14	0.00	0.00	6.61	0.83	1.65	3.31
VI	0.00	0.00	5.66	0.00	54.72	3.77	1.89	22.64	0.00	0.00	0.00	0.00	5.66	5.66
VII	0.00	1.41	1.41	0.00	8.45	4.23	42.25	2.82	0.00	23.94	8.45	5.63	1.41	0.00
VIII	0.00	0.00	1.09	1.09	5.47	1.09	1.46	82.85	0.00	2.55	0.73	0.00	1.09	2.55
IX	0.00	0.00	0.00	5.56	2.78	0.00	0.00	52.78	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	1.47	0.00	0.49	0.00	0.00	5.39	0.49	0.00	83.33	6.86	1.47	0.00	0.49
XI	0.00	1.00	0.00	1.00	9.00	1.00	1.00	2.00	0.00	23.00	43.00	18.00	0.00	1.00
XII	0.00	3.95	0.00	0.00	11.84	0.00	0.00	1.32	0.00	13.16	40.79	26.32	2.63	0.00
XIII	0.00	2.08	2.08	0.00	25.00	2.08	0.00	4.17	0.00	8.33	22.92	10.42	2.08	20.83
XIV	0.67	0.00	18.79	16.11	0.67	2.01	0.00	4.03	0.00	0.00	0.00	0.67	1.34	55.70

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 3.5: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group I (with 25 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	87.90	0.00	12.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	7.02	1.75	1.75	0.00	7.02	0.00	1.75	19.30	0.00	19.30	17.54	14.04	7.02	3.51
III	20.93	0.00	51.16	13.95	0.78	0.00	0.00	1.55	0.00	0.78	0.78	0.00	0.00	10.08
IV	4.67	0.00	16.67	46.00	0.00	0.00	0.00	6.67	0.00	0.00	0.00	0.00	0.00	26.00
V	0.00	0.00	4.96	4.96	47.93	3.31	0.00	30.58	0.00	0.00	3.31	0.83	0.83	3.31
VI	0.00	0.00	7.55	0.00	52.83	3.77	0.00	28.30	0.00	0.00	1.89	0.00	1.89	3.77
VII	0.00	1.41	1.41	0.00	8.45	1.41	42.25	5.63	0.00	23.94	11.27	4.23	0.00	0.00
VIII	0.00	0.00	1.09	1.09	6.93	0.36	1.46	82.48	0.00	2.55	0.73	0.73	0.00	2.55
IX	0.00	0.00	0.00	2.78	2.78	0.00	0.00	52.78	0.00	36.11	2.78	0.00	0.00	2.78
X	0.00	0.49	0.00	0.00	0.00	0.00	5.88	0.49	0.00	83.33	6.37	2.45	0.00	0.98
XI	0.00	1.00	0.00	0.00	9.00	1.00	1.00	2.00	0.00	21.00	49.00	13.00	1.00	2.00
XII	0.00	2.63	0.00	0.00	11.84	0.00	0.00	1.32	0.00	17.11	43.42	22.37	1.32	0.00
XIII	0.00	2.08	2.08	0.00	31.25	0.00	0.00	2.08	0.00	6.25	25.00	12.50	0.00	18.75
XIV	0.67	0.00	16.78	16.11	1.34	0.67	0.00	5.37	0.00	0.00	0.00	0.67	0.00	58.39

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 4.1: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group II (with 1 neighbour).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	43.55	2.42	22.58	19.35	0.81	0.00	0.00	6.45	0.00	0.00	0.00	0.00	0.81	4.03
II	3.51	15.79	1.75	5.26	3.51	0.00	7.02	5.26	5.26	14.04	12.28	7.02	15.79	3.51
III	23.26	0.78	36.43	12.40	0.00	0.00	0.00	6.20	0.00	0.78	0.00	1.55	0.78	17.83
IV	6.00	0.67	8.00	54.67	6.67	0.00	0.00	9.33	2.67	0.00	0.00	0.00	0.67	11.33
V	2.48	1.65	2.48	7.44	47.11	14.05	2.48	6.61	0.83	0.00	5.79	4.96	2.48	1.65
VI	1.89	0.00	3.77	1.89	33.96	16.98	3.77	16.98	0.00	0.00	5.66	1.89	7.55	5.66
VII	1.41	1.41	2.82	0.00	4.23	2.82	47.89	11.27	1.41	14.08	4.23	7.04	1.41	0.00
VIII	4.01	1.46	5.84	3.65	5.47	4.01	2.19	60.58	5.11	2.55	0.73	1.09	1.09	2.19
IX	2.78	5.56	8.33	8.33	2.78	0.00	0.00	30.56	0.00	33.33	5.56	0.00	2.78	0.00
X	0.00	3.92	0.00	0.00	0.00	0.00	5.88	2.94	7.35	67.65	7.84	2.94	1.47	0.00
XI	0.00	2.00	0.00	0.00	8.00	3.00	2.00	3.00	2.00	18.00	37.00	20.00	5.00	0.00
XII	0.00	11.84	0.00	0.00	6.58	2.63	0.00	0.00	1.32	7.89	23.68	39.47	6.58	0.00
XIII	0.00	6.25	2.08	0.00	10.42	16.67	0.00	0.00	2.08	6.25	8.33	14.58	22.92	10.42
XIV	5.37	0.67	11.41	13.42	4.03	2.01	0.00	3.36	0.00	0.00	0.00	0.67	3.36	55.70

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 4.2: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group II (with 5 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	49.19	0.00	19.35	16.13	0.81	0.00	0.00	11.29	0.00	0.00	0.00	0.00	0.00	3.23
II	1.75	7.02	7.02	5.26	5.26	0.00	3.51	17.54	0.00	21.05	8.77	15.79	5.26	1.75
III	25.58	0.78	39.53	9.30	0.00	0.00	0.00	5.43	0.00	0.78	0.78	0.78	0.00	17.05
IV	8.00	0.00	6.00	54.00	2.00	2.00	0.00	14.00	0.00	0.00	0.00	0.00	0.00	14.00
V	2.48	0.83	4.13	4.96	58.68	9.92	0.00	6.61	0.83	0.00	4.96	2.48	1.65	2.48
VI	0.00	0.00	3.77	3.77	33.96	18.87	5.66	22.64	0.00	0.00	1.89	0.00	3.77	5.66
VII	0.00	1.41	0.00	1.41	7.04	2.82	52.11	4.23	0.00	14.08	5.63	5.63	5.63	0.00
VIII	2.55	0.00	4.01	4.38	4.01	1.82	1.46	75.91	0.73	2.19	1.09	0.00	0.36	1.46
IX	5.56	0.00	5.56	8.33	5.56	0.00	0.00	33.33	0.00	38.89	2.78	0.00	0.00	0.00
X	0.00	2.45	0.00	0.49	0.00	0.00	5.39	0.49	1.96	75.98	9.31	3.43	0.49	0.00
XI	0.00	4.00	0.00	1.00	9.00	2.00	2.00	3.00	0.00	16.00	41.00	18.00	4.00	0.00
XII	0.00	3.95	0.00	0.00	15.79	1.32	0.00	1.32	0.00	14.47	26.32	28.95	7.89	0.00
XIII	0.00	4.17	0.00	4.17	18.75	0.00	0.00	4.17	0.00	4.17	8.33	20.83	20.83	14.58
XIV	0.67	0.00	10.07	16.78	1.34	2.01	0.00	6.04	0.00	0.00	0.00	0.67	1.34	61.07

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 4.3: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group II (with 10 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	45.97	0.00	19.35	13.71	0.81	0.00	0.00	16.13	0.81	0.00	0.00	0.00	0.00	3.23
II	0.00	3.51	3.51	1.75	5.26	0.00	1.75	24.56	0.00	19.30	22.81	8.77	5.26	3.51
III	20.93	0.00	40.31	10.08	0.00	0.00	0.00	8.53	0.00	0.78	0.78	0.78	0.00	17.83
IV	6.67	0.00	4.67	59.33	0.00	0.00	0.00	14.67	0.67	0.00	0.00	0.00	0.00	14.00
V	3.31	0.83	4.13	4.96	61.98	0.83	0.00	13.22	0.00	0.00	4.96	0.83	2.48	2.48
VI	0.00	0.00	1.89	9.43	47.17	11.32	0.00	18.87	0.00	0.00	0.00	0.00	5.66	5.66
VII	1.41	2.82	1.41	1.41	4.23	4.23	45.07	2.82	0.00	21.13	7.04	5.63	2.82	0.00
VIII	1.46	0.00	4.74	4.01	4.38	1.46	1.46	76.28	0.00	2.19	1.46	0.36	0.36	1.82
IX	2.78	0.00	5.56	13.89	5.56	0.00	0.00	33.33	0.00	36.11	0.00	2.78	0.00	0.00
X	0.00	1.47	0.00	0.49	0.00	0.00	3.92	0.49	0.00	82.35	5.88	4.41	0.49	0.49
XI	0.00	2.00	1.00	2.00	10.00	1.00	2.00	1.00	0.00	19.00	45.00	14.00	3.00	0.00
XII	0.00	0.00	0.00	0.00	17.11	0.00	0.00	1.32	0.00	18.42	38.16	17.11	7.89	0.00
XIII	0.00	0.00	2.08	4.17	14.58	2.08	0.00	4.17	0.00	8.33	12.50	10.42	25.00	16.67
XIV	4.70	0.00	6.04	15.44	2.01	0.00	0.00	5.37	0.00	0.00	0.67	0.00	0.00	65.77

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 4.4: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group II (with 15 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	37.90	0.00	20.97	16.13	0.00	0.00	0.00	20.97	0.00	0.00	0.00	0.00	0.00	4.03
II	0.00	3.51	3.51	1.75	5.26	0.00	1.75	24.56	0.00	21.05	28.07	3.51	3.51	3.51
III	19.38	0.00	35.66	9.30	0.00	0.00	0.00	13.95	0.00	0.78	0.78	0.78	0.00	19.38
IV	7.33	0.00	6.00	52.67	0.67	0.00	0.00	17.33	0.00	0.00	0.00	0.00	0.00	16.00
V	3.31	0.83	2.48	5.79	66.94	0.00	0.00	11.57	0.00	0.00	2.48	0.83	2.48	3.31
VI	0.00	0.00	1.89	5.66	47.17	7.55	0.00	22.64	0.00	0.00	0.00	0.00	5.66	9.43
VII	1.41	2.82	0.00	0.00	9.86	1.41	43.66	2.82	0.00	22.54	5.63	8.45	0.00	1.41
VIII	1.82	0.00	2.92	5.11	4.74	0.73	1.46	78.47	0.00	2.19	1.46	0.36	0.00	0.73
IX	2.78	0.00	5.56	13.89	5.56	0.00	0.00	33.33	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.98	0.00	0.49	0.00	0.00	3.92	0.49	0.00	84.31	7.35	1.96	0.00	0.49
XI	0.00	1.00	0.00	1.00	9.00	0.00	1.00	4.00	0.00	21.00	37.00	22.00	4.00	0.00
XII	0.00	0.00	0.00	0.00	15.79	0.00	0.00	1.32	0.00	15.79	42.11	14.47	10.53	0.00
XIII	0.00	2.08	2.08	4.17	16.67	4.17	0.00	6.25	0.00	4.17	10.42	14.58	22.92	12.50
XIV	2.68	0.00	7.38	12.08	2.68	0.00	0.00	7.38	0.00	0.00	0.67	0.00	1.34	65.77

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 4.5: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group II (with 25 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	34.68	0.00	19.35	20.97	0.00	0.00	0.00	20.97	0.00	0.00	0.00	0.00	0.00	4.03
II	0.00	1.75	3.51	1.75	5.26	0.00	1.75	26.32	0.00	19.30	29.82	5.26	1.75	3.51
III	13.18	0.00	37.21	11.63	0.00	0.00	0.00	15.50	0.00	0.78	0.78	0.78	0.00	20.16
IV	4.67	0.00	5.33	50.00	0.00	0.00	0.00	21.33	0.00	0.00	0.00	0.00	0.00	18.67
V	3.31	0.83	3.31	5.79	64.46	1.65	0.00	13.22	0.00	0.00	1.65	0.83	1.65	3.31
VI	0.00	0.00	1.89	5.66	47.17	7.55	0.00	22.64	0.00	0.00	0.00	0.00	5.66	9.43
VII	1.41	2.82	0.00	0.00	11.27	0.00	43.66	2.82	0.00	25.35	7.04	4.23	0.00	1.41
VIII	0.73	0.00	2.19	5.11	4.38	1.82	1.46	79.20	0.00	2.19	1.09	0.73	0.00	1.09
IX	2.78	0.00	0.00	11.11	5.56	0.00	0.00	41.67	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.49	0.00	0.49	0.00	0.00	2.94	0.49	0.00	85.29	7.84	1.96	0.00	0.49
XI	0.00	1.00	0.00	1.00	12.00	0.00	1.00	4.00	0.00	23.00	46.00	8.00	4.00	0.00
XII	0.00	0.00	0.00	0.00	21.05	0.00	0.00	2.63	0.00	14.47	38.16	17.11	6.58	0.00
XIII	0.00	2.08	0.00	4.17	25.00	2.08	0.00	6.25	0.00	6.25	14.58	10.42	16.67	12.50
XIV	2.01	0.00	4.70	9.40	2.68	0.67	0.00	8.05	0.00	0.00	0.67	0.00	0.00	71.81

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 5.1: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group III (with 1 neighbour).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	80.65	0.81	12.90	4.03	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	5.26	22.81	1.75	3.51	5.26	8.77	5.26	8.77	0.00	14.04	7.02	12.28	5.26	0.00
III	13.18	0.00	51.16	11.63	2.33	0.00	0.00	3.10	0.00	0.78	0.78	0.00	1.55	15.50
IV	4.67	0.00	10.67	62.67	3.33	0.00	0.00	8.67	0.00	0.00	0.00	0.00	0.00	10.00
V	0.83	3.31	0.83	4.96	51.24	14.05	4.13	7.44	2.48	0.00	5.79	1.65	2.48	0.83
VI	0.00	5.66	1.89	0.00	41.51	22.64	1.89	7.55	0.00	0.00	5.66	1.89	9.43	1.89
VII	0.00	4.23	1.41	1.41	7.04	1.41	45.07	11.27	1.41	18.31	2.82	2.82	2.82	0.00
VIII	0.36	2.19	2.55	3.65	2.19	1.09	2.19	75.55	4.74	2.55	0.73	1.09	0.00	1.09
IX	0.00	0.00	2.78	0.00	8.33	0.00	0.00	38.89	8.33	38.89	2.78	0.00	0.00	0.00
X	0.00	2.45	0.49	0.00	0.00	0.00	5.39	2.45	5.88	66.67	9.80	5.39	1.47	0.00
XI	0.00	4.00	0.00	0.00	8.00	2.00	1.00	2.00	3.00	15.00	38.00	24.00	3.00	0.00
XII	0.00	6.58	0.00	0.00	5.26	2.63	1.32	3.95	1.32	7.89	34.21	28.95	7.89	0.00
XIII	0.00	4.17	4.17	2.08	6.25	6.25	2.08	2.08	0.00	6.25	4.17	10.42	35.42	16.67
XIV	0.00	0.00	10.74	8.05	2.01	1.34	0.00	2.68	0.00	0.00	0.00	0.00	4.03	71.14

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 5.2: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group III (with 5 neighbour).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	79.84	0.00	12.90	5.65	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.81
II	5.26	8.77	3.51	1.75	7.02	5.26	3.51	19.30	1.75	21.05	7.02	12.28	1.75	1.75
III	17.83	0.00	52.71	10.85	0.78	0.78	0.00	2.33	0.00	0.78	0.00	0.78	0.00	13.18
IV	3.33	0.00	10.67	64.67	2.00	0.00	0.00	8.00	0.00	0.00	0.00	0.00	0.00	11.33
V	0.83	0.83	1.65	4.13	61.98	9.92	0.83	8.26	0.83	0.00	5.79	1.65	2.48	0.83
VI	0.00	0.00	1.89	0.00	56.60	9.43	3.77	16.98	0.00	0.00	0.00	1.89	7.55	1.89
VII	0.00	1.41	0.00	0.00	8.45	2.82	49.30	5.63	0.00	16.90	4.23	7.04	4.23	0.00
VIII	0.36	1.09	2.92	2.19	1.46	0.73	1.82	83.21	1.46	2.19	0.73	0.36	0.73	0.73
IX	0.00	0.00	0.00	0.00	0.00	2.78	0.00	55.56	0.00	36.11	5.56	0.00	0.00	0.00
X	0.00	2.45	0.00	0.00	0.00	0.00	6.37	1.96	2.94	75.98	7.84	1.96	0.49	0.00
XI	0.00	3.00	0.00	0.00	9.00	1.00	0.00	4.00	0.00	17.00	47.00	17.00	2.00	0.00
XII	0.00	5.26	0.00	0.00	6.58	2.63	1.32	2.63	1.32	15.79	27.63	27.63	9.21	0.00
XIII	0.00	2.08	4.17	0.00	4.17	4.17	4.17	6.25	0.00	2.08	4.17	20.83	31.25	16.67
XIV	1.34	0.00	4.70	17.45	0.00	0.00	0.00	1.34	0.67	0.00	0.00	0.00	2.01	72.48

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 5.3: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group III (with 10 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	87.10	0.00	9.68	3.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	3.51	1.75	3.51	3.51	8.77	1.75	1.75	22.81	0.00	24.56	12.28	10.53	5.26	0.00
III	17.83	0.78	45.74	14.73	0.00	0.00	0.00	3.88	0.00	0.78	0.78	0.78	0.00	14.73
IV	6.00	0.00	10.67	62.67	0.67	0.00	0.00	8.67	0.00	0.00	0.00	0.00	0.00	11.33
V	0.00	0.00	4.13	4.13	66.94	3.31	0.00	9.92	0.83	0.00	4.13	3.31	3.31	0.00
VI	0.00	1.89	1.89	0.00	54.72	1.89	1.89	26.42	0.00	0.00	0.00	1.89	7.55	1.89
VII	0.00	1.41	0.00	0.00	9.86	2.82	43.66	7.04	0.00	21.13	5.63	5.63	2.82	0.00
VIII	0.36	0.73	2.55	1.82	1.09	0.36	1.46	87.96	0.00	2.92	0.00	0.73	0.00	0.00
IX	0.00	0.00	0.00	0.00	0.00	5.56	0.00	55.56	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.49	0.00	0.00	0.00	0.49	6.37	1.47	0.00	84.80	5.39	0.49	0.49	0.00
XI	0.00	4.00	0.00	0.00	11.00	0.00	0.00	5.00	0.00	15.00	49.00	15.00	1.00	0.00
XII	0.00	2.63	0.00	0.00	10.53	0.00	0.00	2.63	0.00	15.79	32.89	22.37	13.16	0.00
XIII	0.00	2.08	6.25	0.00	6.25	8.33	0.00	6.25	0.00	6.25	6.25	25.00	18.75	14.58
XIV	0.67	0.00	7.38	20.13	0.00	0.00	0.00	5.37	0.00	0.00	0.00	0.00	1.34	65.10

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 5.4: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group III (with 15 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	83.06	0.00	11.29	4.03	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.81
II	3.51	0.00	5.26	3.51	12.28	0.00	1.75	21.05	0.00	24.56	14.04	8.77	3.51	1.75
III	20.93	0.78	41.09	16.28	0.78	0.00	0.00	3.88	0.00	0.78	0.78	0.00	0.00	14.73
IV	8.00	0.00	8.00	62.67	0.67	0.00	0.00	6.67	0.00	0.00	0.00	0.00	0.00	14.00
V	0.00	0.00	3.31	3.31	70.25	0.83	0.00	12.40	0.00	0.00	4.13	2.48	2.48	0.83
VI	0.00	1.89	1.89	0.00	56.60	3.77	1.89	26.42	0.00	0.00	0.00	0.00	5.66	1.89
VII	0.00	0.00	0.00	0.00	8.45	1.41	43.66	5.63	0.00	25.35	5.63	5.63	4.23	0.00
VIII	1.09	0.00	2.55	1.82	1.82	0.36	1.46	86.86	0.00	3.28	0.00	0.00	0.36	0.36
IX	0.00	0.00	0.00	0.00	0.00	5.56	0.00	55.56	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.98	0.00	0.00	0.49	0.00	4.90	1.47	0.00	86.27	5.39	0.00	0.49	0.00
XI	0.00	1.00	0.00	0.00	12.00	2.00	1.00	3.00	0.00	21.00	48.00	12.00	0.00	0.00
XII	0.00	2.63	0.00	0.00	11.84	1.32	1.32	2.63	0.00	13.16	36.84	23.68	6.58	0.00
XIII	0.00	2.08	6.25	2.08	8.33	8.33	0.00	6.25	0.00	8.33	6.25	27.08	10.42	14.58
XIV	0.67	0.00	6.04	20.13	0.00	0.00	0.00	4.03	0.00	0.00	0.00	0.00	2.01	67.11

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 5.5: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group III (with 25 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	87.10	0.00	8.06	4.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II	5.26	0.00	5.26	3.51	8.77	1.75	1.75	24.56	0.00	24.56	17.54	7.02	0.00	0.00
III	20.93	0.00	41.09	13.18	0.78	0.00	0.00	3.88	0.00	0.78	0.78	0.00	0.00	18.60
IV	6.00	0.00	7.33	60.00	0.67	0.00	0.00	7.33	0.00	0.00	0.00	0.00	0.00	18.67
V	0.00	0.83	3.31	4.13	70.25	2.48	0.00	14.05	0.00	0.00	3.31	1.65	0.00	0.00
VI	0.00	0.00	1.89	0.00	58.49	5.66	0.00	26.42	0.00	0.00	0.00	1.89	3.77	1.89
VII	0.00	0.00	0.00	0.00	8.45	2.82	42.25	7.04	0.00	26.76	4.23	4.23	4.23	0.00
VIII	0.73	0.00	2.55	1.82	1.82	0.36	1.46	87.59	0.00	3.28	0.00	0.00	0.36	0.00
IX	0.00	0.00	0.00	0.00	5.56	0.00	0.00	55.56	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.00	0.00	0.00	0.00	0.49	4.41	1.47	0.00	88.24	4.41	0.98	0.00	0.00
XI	0.00	0.00	0.00	0.00	10.00	1.00	0.00	3.00	0.00	25.00	50.00	11.00	0.00	0.00
XII	0.00	1.32	0.00	0.00	15.79	0.00	0.00	3.95	0.00	17.11	39.47	18.42	3.95	0.00
XIII	0.00	2.08	6.25	0.00	16.67	0.00	0.00	6.25	0.00	8.33	16.67	22.92	2.08	18.75
XIV	0.67	0.00	5.37	20.81	0.00	0.00	0.00	4.70	0.00	0.00	0.00	0.00	0.00	68.46

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 6.1: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group IV (with 1 neighbour).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	73.39	1.61	20.97	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
II	5.26	21.05	1.75	1.75	8.77	1.75	5.26	12.28	3.51	19.30	5.26	10.53	3.51	0.00
III	19.38	2.33	42.64	15.50	3.88	0.00	0.00	1.55	0.00	0.78	0.78	0.00	0.00	13.18
IV	2.00	0.00	11.33	64.67	3.33	0.00	0.00	4.00	0.00	0.00	0.00	0.00	2.67	12.00
V	0.00	2.48	4.96	5.79	49.59	15.70	2.48	3.31	1.65	0.00	7.44	2.48	3.31	0.83
VI	0.00	1.89	0.00	0.00	41.51	28.30	0.00	11.32	0.00	1.89	0.00	3.77	9.43	1.89
VII	0.00	7.04	0.00	0.00	7.04	1.41	45.07	8.45	0.00	19.72	4.23	2.82	4.23	0.00
VIII	0.00	2.19	1.09	3.65	2.19	0.73	1.82	72.26	6.93	2.55	1.82	1.46	1.82	1.46
IX	0.00	0.00	2.78	0.00	2.78	0.00	0.00	41.67	8.33	33.33	5.56	2.78	2.78	0.00
X	0.00	4.41	0.98	0.00	0.00	0.00	3.92	3.43	5.88	68.63	4.90	5.88	1.96	0.00
XI	0.00	5.00	0.00	0.00	9.00	1.00	4.00	2.00	3.00	14.00	37.00	18.00	7.00	0.00
XII	0.00	3.95	0.00	0.00	9.21	1.32	1.32	2.63	0.00	13.16	32.89	34.21	1.32	0.00
XIII	0.00	8.33	0.00	2.08	10.42	6.25	2.08	0.00	2.08	6.25	12.50	8.33	29.17	12.50
XIV	1.34	1.34	14.09	12.75	0.00	0.67	0.00	4.70	0.00	0.00	0.00	0.00	3.36	61.74

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 6.2: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group IV (with 5 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	81.45	0.00	16.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
II	5.26	12.28	3.51	0.00	7.02	0.00	3.51	24.56	0.00	26.32	7.02	7.02	3.51	0.00
III	16.28	0.00	53.49	15.50	1.55	0.00	0.00	1.55	0.78	0.78	0.78	0.00	0.00	9.30
IV	2.67	0.00	17.33	54.67	0.67	0.00	0.00	7.33	0.00	0.00	0.00	0.00	0.00	17.33
V	0.00	1.65	4.13	4.96	57.85	11.57	1.65	5.79	0.83	0.00	5.79	1.65	3.31	0.83
VI	0.00	1.89	0.00	0.00	52.83	11.32	1.89	15.09	3.77	0.00	1.89	0.00	11.32	0.00
VII	0.00	0.00	0.00	1.41	5.63	2.82	52.11	4.23	0.00	22.54	4.23	5.63	1.41	0.00
VIII	0.00	0.36	1.46	0.73	2.92	0.73	2.19	85.40	0.00	2.55	0.36	1.09	1.09	1.09
IX	0.00	0.00	0.00	0.00	2.78	0.00	0.00	52.78	2.78	36.11	2.78	0.00	0.00	2.78
X	0.00	2.94	0.49	0.00	0.00	0.49	4.90	0.49	2.45	79.41	3.92	3.92	0.98	0.00
XI	0.00	2.00	0.00	0.00	9.00	2.00	2.00	4.00	0.00	17.00	44.00	15.00	5.00	0.00
XII	0.00	3.95	0.00	0.00	9.21	0.00	0.00	1.32	0.00	11.84	26.32	35.53	11.84	0.00
XIII	0.00	4.17	0.00	0.00	16.67	4.17	0.00	2.08	2.08	8.33	12.50	16.67	18.75	14.58
XIV	0.00	0.67	8.72	19.46	0.67	1.34	0.00	4.03	0.00	0.00	0.00	0.00	1.34	63.76

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 6.3: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group IV (with 10 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	84.68	0.00	12.90	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
II	7.02	3.51	0.00	1.75	3.51	0.00	3.51	22.81	0.00	22.81	14.04	17.54	1.75	1.75
III	18.60	0.00	54.26	13.18	1.55	0.00	0.00	1.55	0.00	0.78	0.78	0.00	0.00	9.30
IV	3.33	0.00	15.33	54.00	0.67	0.00	0.00	7.33	0.00	0.00	0.00	0.00	0.00	19.33
V	0.00	0.00	4.13	4.13	63.64	6.61	1.65	8.26	0.00	0.00	6.61	0.83	1.65	2.48
VI	0.00	0.00	0.00	0.00	50.94	15.09	1.89	24.53	1.89	0.00	0.00	0.00	5.66	0.00
VII	0.00	1.41	0.00	1.41	5.63	4.23	43.66	2.82	0.00	26.76	8.45	4.23	1.41	0.00
VIII	0.00	0.36	0.73	0.73	2.92	1.46	1.46	87.23	0.00	2.55	0.36	0.73	0.36	1.09
IX	0.00	0.00	0.00	2.78	2.78	5.56	0.00	50.00	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.98	0.00	0.00	0.00	0.00	3.43	0.98	0.98	84.80	5.88	2.45	0.49	0.00
XI	0.00	2.00	0.00	0.00	13.00	1.00	2.00	4.00	0.00	14.00	46.00	14.00	4.00	0.00
XII	0.00	2.63	0.00	0.00	7.89	1.32	1.32	1.32	0.00	13.16	30.26	35.53	6.58	0.00
XIII	0.00	2.08	0.00	0.00	18.75	10.42	0.00	4.17	0.00	8.33	18.75	14.58	12.50	10.42
XIV	0.00	0.67	8.05	16.11	0.67	1.34	0.00	4.03	0.00	0.00	0.00	0.00	2.01	67.11

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 6.4: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group IV (with 15 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	87.90	0.00	10.48	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
II	7.02	1.75	0.00	1.75	5.26	0.00	1.75	24.56	0.00	17.54	15.79	19.30	3.51	1.75
III	20.93	0.00	48.84	12.40	1.55	0.00	0.00	2.33	0.00	0.78	0.78	0.00	0.00	12.40
IV	4.00	0.00	14.67	48.00	0.67	0.00	0.00	7.33	0.00	0.00	0.00	0.00	0.00	25.33
V	0.00	0.00	3.31	4.96	58.68	8.26	0.00	12.40	0.00	0.00	7.44	0.00	3.31	1.65
VI	0.00	0.00	0.00	0.00	54.72	7.55	1.89	30.19	0.00	0.00	0.00	0.00	5.66	0.00
VII	0.00	1.41	0.00	1.41	9.86	1.41	42.25	2.82	0.00	28.17	8.45	2.82	1.41	0.00
VIII	0.00	0.36	1.09	1.46	2.55	2.19	1.46	85.77	0.00	2.19	0.36	1.09	0.73	0.73
IX	0.00	0.00	2.78	0.00	2.78	5.56	0.00	50.00	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.49	0.00	0.00	0.00	0.49	3.92	0.49	0.00	83.82	6.37	4.41	0.00	0.00
XI	0.00	1.00	0.00	0.00	13.00	1.00	1.00	2.00	0.00	19.00	45.00	18.00	0.00	0.00
XII	0.00	1.32	0.00	0.00	6.58	1.32	2.63	1.32	0.00	15.79	35.53	27.63	7.89	0.00
XIII	0.00	0.00	0.00	0.00	27.08	2.08	0.00	8.33	0.00	6.25	22.92	10.42	6.25	16.67
XIV	0.00	0.67	8.72	12.75	0.67	0.00	0.00	6.04	0.00	0.00	0.00	0.00	0.00	71.14

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 6.5: Percentage of mutual funds correctly classified according to knn clustering according to the attributes of Group IV (with 25 neighbours).

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I	89.52	0.00	8.87	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
II	7.02	1.75	0.00	1.75	5.26	0.00	0.00	24.56	0.00	19.30	21.05	15.79	1.75	1.75
III	20.93	0.00	51.16	12.40	0.78	0.00	0.00	3.10	0.00	0.78	0.78	0.00	0.00	10.08
IV	4.00	0.00	12.67	44.00	0.67	0.00	0.00	7.33	0.00	0.00	0.00	0.00	0.00	31.33
V	0.00	0.00	3.31	5.79	63.64	1.65	0.00	14.88	0.00	0.00	4.13	2.48	2.48	1.65
VI	0.00	0.00	0.00	0.00	56.60	5.66	0.00	32.08	0.00	0.00	1.89	0.00	1.89	1.89
VII	0.00	1.41	0.00	1.41	7.04	5.63	39.44	2.82	0.00	29.58	8.45	2.82	1.41	0.00
VIII	0.00	0.36	1.09	1.09	3.65	0.00	1.46	86.86	0.00	2.19	0.36	1.09	1.09	0.73
IX	0.00	0.00	2.78	0.00	2.78	5.56	0.00	50.00	0.00	36.11	2.78	0.00	0.00	0.00
X	0.00	0.49	0.00	0.00	0.00	0.00	3.43	0.98	0.00	84.80	6.37	3.92	0.00	0.00
XI	0.00	1.00	0.00	0.00	10.00	0.00	1.00	3.00	0.00	20.00	51.00	14.00	0.00	0.00
XII	0.00	0.00	0.00	0.00	14.47	1.32	0.00	1.32	0.00	11.84	40.79	25.00	5.26	0.00
XIII	0.00	0.00	2.08	0.00	27.08	2.08	0.00	8.33	0.00	8.33	22.92	12.50	2.08	14.58
XIV	0.00	0.67	14.77	12.75	0.00	0.67	0.00	7.38	0.00	0.00	0.00	0.00	0.67	63.09

This table shows the correspondence between the official categories and the attributed-based classification. The diagonal represents the percentage of mutual funds which are correctly classified in the official classification.

Table 7.1: Official categories classified in cluster from the two-level approach. (With Group I of attributes)

clusters	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Self-Organizing Map with a 10x10 neurons grid.														
1	100.00	26.32	97.67	93.33	37.19	35.85	7.04	71.53	47.22	0.98	1.00	0.00	12.50	83.89
2	0.00	0.00	0.00	5.33	0.00	0.00	0.00	1.09	0.00	0.49	1.00	0.00	0.00	7.38
3	0.00	1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	19.30	0.00	0.00	1.65	0.00	14.08	1.46	13.89	23.04	7.00	5.26	0.00	1.34
5	0.00	3.51	0.00	1.33	4.96	3.77	1.41	3.28	0.00	1.47	2.00	0.00	16.67	6.04
6	0.00	3.51	0.00	0.00	0.00	0.00	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	42.11	2.33	0.00	20.66	16.98	64.79	5.47	25.00	73.04	86.00	86.84	50.00	0.67
8	0.00	3.51	0.00	0.00	35.54	43.40	11.27	17.15	13.89	0.98	3.00	7.89	20.83	0.67

This table shows the percentage of each official category (columns) that is place in each cluster (rows) following a two-level approach based on Self-Organizing Maps and k-means clustering.

Table 7.2: Official categories classified in cluster from the two-level approach. (With Group II of attributes)

Clusters	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Self-Organizing Map with a 10x15 neurons grid.														
1	2.42	14.04	2.33	3.33	2.48	1.89	2.82	2.55	5.56	13.73	21.00	10.53	18.75	0.00
2	16.94	10.53	24.81	24.67	6.61	7.55	2.82	40.15	22.22	0.98	2.00	0.00	2.08	10.07
3	30.65	3.51	35.66	40.67	22.31	13.21	2.82	16.06	2.78	0.00	0.00	0.00	10.42	53.69
4	11.29	31.58	9.30	3.33	47.93	54.72	18.31	11.68	13.89	20.59	48.00	63.16	54.17	3.36
5	32.26	3.51	20.93	22.00	2.48	3.77	0.00	9.12	2.78	0.00	0.00	0.00	0.00	22.15
6	0.00	33.33	2.33	2.00	4.96	7.55	54.93	14.96	44.44	47.55	25.00	23.68	6.25	0.67
7	4.84	1.75	3.88	3.33	10.74	11.32	16.90	4.01	5.56	17.16	3.00	0.00	4.17	7.38
8	1.61	1.75	0.78	0.67	2.48	0.00	1.41	1.46	2.78	0.00	1.00	2.63	4.17	2.68
9	36.29	71.93	43.41	27.33	46.28	49.06	88.73	51.09	72.22	87.25	83.00	85.53	72.92	15.44

This table shows the percentage of each official category (columns) that is place in each cluster (rows) following a two-level approach based on Self-Organizing Maps and k-means clustering.

Table 7.3: Official categories classified in cluster from the two-level approach. (With Group III of attributes)

clusters	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Self-Organizing Map with a 15x15 neurons grid.														
1	6.45	17.54	7.75	7.33	22.31	15.09	7.04	31.02	16.67	1.47	13.00	15.79	22.92	6.04
2	62.90	10.53	40.31	70.00	25.62	18.87	5.63	2.19	2.78	1.96	25.00	22.37	4.17	73.15
3	0.00	29.82	2.33	0.67	4.96	11.32	70.42	16.06	41.67	89.22	30.00	18.42	6.25	0.00
4	0.81	14.04	10.08	2.67	5.79	5.66	5.63	10.22	13.89	2.94	3.00	0.00	6.25	0.67
5	1.61	19.30	13.18	1.33	3.31	22.64	4.23	20.80	8.33	0.98	25.00	39.47	41.67	2.01
6	20.16	3.51	10.85	4.00	0.00	1.89	1.41	1.82	2.78	0.00	0.00	0.00	0.00	1.34
7	8.06	5.26	15.50	14.00	4.13	5.66	2.82	8.76	5.56	2.45	1.00	3.95	16.67	16.78
	0.00	0.00	0.00	0.00	33.88	18.87	2.82	9.12	8.33	0.98	3.00	0.00	2.08	0.00

This table shows the percentage of each official category (columns) that is place in each cluster (rows) following a two-level approach based on Self-Organizing Maps and k-means clustering.

Table 7.4: Official categories classified in cluster from the two-level approach. (With Group IV of attributes)

clusters	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Self-Organizing Map with a 10x10 neurons grid.														
1	97.58	7.02	75.97	48.67	30.58	28.30	1.41	25.91	25.00	0.00	1.00	0.00	12.50	75.17
2	0.00	47.37	2.33	1.33	0.83	5.66	76.06	30.66	55.56	94.12	46.00	48.68	25.00	8.05
3	2.42	14.04	12.40	32.00	22.31	20.75	7.04	18.98	11.11	1.96	44.00	36.84	22.92	14.77
4	0.00	24.56	0.00	0.67	2.48	5.66	4.23	11.31	0.00	3.43	3.00	9.21	12.50	0.00
5	0.00	7.02	9.30	17.33	43.80	39.62	11.27	13.14	8.33	0.49	6.00	5.26	27.08	2.01

This table shows the percentage of each official category (columns) that is place in each cluster (rows) following a two-level approach based on Self-Organizing Maps and k-means clustering.

Table 8.1: Correctly classified Mutual Funds from the hybrid classification (CNMV-SOMs)- Employing the attributes of Group I

	Cluster 1	Cluster 2	Cluster 3
Cluster 1	60.06	9.29	30.65
Cluster 2	8.09	87.41	4.50
Cluster 3	9.12	4.91	85.97

Table 8.2: Correctly classified Mutual Funds from the hybrid classification (CNMV-SOMs)- Employing the attributes of Group II

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Cluster 1	70.44	12.77	10.58	1.09	5.11
Cluster 2	8.41	82.48	3.50	5.37	0.23
Cluster 3	5.28	10.30	74.37	0.25	9.80
Cluster 4	12.10	53.23	0.00	33.87	0.81
Cluster 5	7.07	4.89	17.93	0.27	69.84

Table 8.3: Correctly classified Mutual Funds from the hybrid classification (CNMV-SOMs)- Employing the attributes of Group III

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Cluster 1	85.04	7.30	5.47	1.09	1.09
Cluster 2	2.72	96.01	0.36	0.72	0.18
Cluster 3	7.91	1.71	78.21	8.97	3.21
Cluster 4	10.17	6.78	26.55	38.98	17.51

Table 8.4: Correctly classified Mutual Funds from the hybrid classification (CNMV-SOMs)-Employing the attributes of Group IV

	Cluster 1	Cluster 2	Cluster 3
Cluster 1	94.02	4.17	1.81
Cluster 2	2.08	90.95	6.97
Cluster 3	8.11	28.83	63.06

Table 9: Results from a simulations of portfolios from official classification and clustering.

	Sharpe's Ratio		Return		Risk	
	Legal Classification	SOM's Classification	Legal Classification	SOM's Classification	Legal Classification	SOM's Classification
From Group I	-0.64	-0.68	-0.05	-0.08	0.07	0.11
Group II	-0.65	-0.51	-0.05	-0.04	0.07	0.07
Group III	-0.64	-0.38	-0.05	-0.02	0.07	0.05
Group IV	-0.64	-0.49	-0.05	-0.04	0.07	0.07