```
@RELATION conjunto_entrenamiento_datos

@ATTRIBUTE kpi_tiket_medio REAL
@ATTRIBUTE kpi_cifra_ventas REAL
@ATTRIBUTE kpi_margen_comercial REAL
@ATTRIBUTE kpi_rotacion_stock REAL
@ATTRIBUTE kpi_coef_rentabilidad REAL
@ATTRIBUTE kpi_cobertura_stock REAL
@ATTRIBUTE cantidad REAL
@ATTRIBUTE kpi_anho REAL
@ATTRIBUTE kpi_mes REAL
@ATTRIBUTE kpi_semana REAL
@ATTRIBUTE resultado {'Nada','Poco','Medio','Mucho'}

@DATA
6.412,488500,20.766,0.377,38194,18.000,109,2013,12,49,Nada
3.667,247500,23.094,0.191,10896,5.643,55,2013,12,50,Nada
1.375,49500,18.586,0.021,190,6.145,11,2013,12,51,Nada
1.222,49500,23.737,0.015,181,12.480,11,2013,12,52,Nada
0.667,9000,31.131,0.003,8,27.390,2,2013,12,53,Nada
1.000,13500,31.131,0.005,20,79.750,3,2014,1,1,Nada
1.000,18000,20.727,0.008,30,111.188,4,2014,1,2,Nada
1.000,13500,23.737,0.009,29,131.000,3,2014,1,3,Nada
1.333,18000,16.655,0.018,54,78.300,4,2014,1,4,Nada
4.500,324000,31.145,0.389,39273,2.415,72,2015,10,42,Poco
5.370,652500,31.145,0.876,178047,3.778,145,2015,10,43,Nada
3.167,85500,31.145,0.110,2916,1.061,19,2015,10,44,Poco
4.300,193500,31.145,0.185,11146,3.229,43,2015,11,45,Nada
3.818,189000,31.145,0.221,13012,3.058,42,2015,11,46,Nada
4.786,238500,12.957,0.161,4977,4.875,67,2015,11,47,Nada
6.923,630000,11.472,0.314,22703,13.086,180,2015,11,48,Nada
5.407,511000,11.472,0.327,19190,5.014,146,2015,11,49,Nada
6.098,875000,11.472,0.880,88362,3.122,250,2015,12,50,Poco
6.806,738500,11.472,2.654,224854,0.828,211,2015,12,51,Medio
```

10.179,997500,11.455,1.588,181413,1.404,285,2015,12,53,Poco
7.037,665000,11.455,10.270,782312,0.154,190,2016,1,53,Medio
8.800,1078000,11.455,0.777,95919,0.221,308,2016,1,3,Medio
5.973,1568000,11.455,0.818,146832,7.588,448,2016,1,4,Nada
7.825,1095500,11.455,1.950,244714,1.258,313,2016,1,5,Poco
5.636,434000,11.455,0.193,9572,0.011,124,2016,2,6,Medio
6.595,854000,11.455,0.210,20506,4.353,244,2016,2,7,Poco
7.065,1137500,11.455,0.369,48093,4.599,325,2016,2,8,Poco
10.792,906500,11.455,0.441,45776,3.104,259,2016,2,9,Poco
6.968,756000,11.455,0.615,53290,1.659,216,2016,3,10,Poco
6.771,829500,11.455,1.888,179432,0.915,237,2016,3,11,Medio
8.250,577500,11.455,0.600,39690,0.029,165,2016,3,12,Medio
7.250,812000,11.455,0.543,50535,2.636,232,2016,3,13,Medio
5.750,805000,11.455,1.173,108204,1.472,230,2016,4,14,Poco
11.120,973000,11.454,1.823,203167,0.388,278,2016,4,15,Medio
7.276,738500,11.454,0.984,83210,0.908,211,2016,4,16,Medio
6.667,420000,11.455,0.242,11651,0.855,120,2016,4,17,Medio
7.886,966000,11.455,0.425,47056,3.872,276,2016,5,18,Poco
7.810,574000,11.455,0.381,25047,2.530,164,2016,5,19,Poco
7.345,745500,11.455,0.878,75005,1.870,213,2016,5,20,Poco
9.095,668500,11.455,1.394,106756,0.625,191,2016,5,21,Medio
6.821,668500,11.455,2.768,211965,0.729,191,2016,5,22,Medio
8.667,819000,11.455,0.352,33011,2.235,234,2016,6,24,Medio
6.286,308000,11.455,0.121,4259,4.282,88,2016,6,25,Nada
3.412,203000,11.455,0.149,3458,3.223,58,2016,6,26,Nada
1.143,28000,11.455,0.072,231,1.713,8,2016,7,27,Nada
7.600,532000,11.455,2.187,133275,0.097,152,2016,7,28,Medio
7.278,1001000,18.885,2.130,402667,1.844,262,2016,7,29,Poco
5.778,1248000,22.523,4.026,1131588,0.796,312,2016,7,30,Mucho
6.556,1416000,22.523,1.566,499550,0.178,354,2016,7,31,Medio
7.067,848000,22.523,0.700,133632,1.322,212,2016,8,32,Medio
6.300,756000,22.523,0.982,167176,0.673,189,2016,8,33,Medio

Matriz de confusión

		Predicción (B)					
		a = Nada	b = Poco	c = Medio	d = Mucho		
Real (A)	a = Nada	**95**	4	0	0	99	0,6781
	b = Poco	2	**17**	4	0	23	0,1575
	c = Medio	0	4	**15**	2	21	0,1438
	d = Mucho	0	0	0	**3**	3	0,0205
		97	25	19	5	130	

	0,6644	0,1712	0,1301	0,0342

Total Number of Instances	146
Correctly Classified Instances	130
Incorrectly Classified Instances	16

Exactitud	0,890	Exactitud = (TP + TN) / (TP + TN + FP + FN)	(95+17+15+3) / (95+17+15+3+4+4+2+2+4)
Precisión (Poco)	0,680	Precisión = (TP) / (TP + FP)	(17) / (17+4+4)
Sensibilidad o Recall (Poco)	0,739	Sensibilidad = (TP) / (TP + FN)	(17) / (17+2+4)
Medida F (Poco)	0,708	Medida = (2 * Sensibilidad * Precision) / (Sensibilidad + Precision)	(2*0.739*0.680) / (0.739+0.680)

P(A-Nada)*P(B-Nada)	0,451	La probabilidad de que ambos evaluadores digan "Nada" al azar.	
P(A-Poco)*P(B-Poco)	0,027	La probabilidad de que ambos evaluadores digan "Poco" al azar.	
P(A-Medio)*P(B-Medio)	0,019	La probabilidad de que ambos evaluadores digan "Medio" al azar.	
P(A-Mucho)*P(B-Mucho)	0,001	La probabilidad de que ambos evaluadores digan "Mucho" al azar.	
Pr(a)	0,890	Pr(a) = (95+17+15+3) / (95+17+15+3+4+4+2+2+4)	Pr(a) el acuerdo relativo observado entre examinadores, o el porcentaje de acuerdo observado.
Pr(e)	0,497	Pr(e) = 0.451 + 0.027 + 0.019 + 0.001	Pr(e) es la probabilidad de que el acuerdo entre examinadores se deba al azar, o la probabilidad hipotética de acuerdo casual.
Kappa	0,782	kappa = (Pr(a) - Pr(e)) / (1 - Pr(e))	El coeficiente kappa de Cohen (κ) es una estadística que mide el acuerdo entre evaluadores para los ítems cualitativos (categóricos).

$$Exactitud = \frac{1}{n} \sum_{i=1}^{N} f_{ii}$$

$$Precisión_i = \frac{f_{ii}}{\sum_{j=1}^{N} f_{ji}}$$

$$Sensibilidad_i = \frac{f_{ii}}{\sum_{j=1}^{N} f_{ij}}$$

$$Medida\_F_1(i) = \frac{2 * Sensibilidad_i * Precision_i}{\left(Sensibilidad_i + Precision_i \right)}$$

		Clase Predicha			
		Clase 1	**Clase 2**	**Clase ...**	**Clase N**
Clase Real	**Clase 1**	f_{11}	f_{12}	...	f_{1N}
	Clase 2	f_{21}	f_{22}	...	f_{2N}
	Clase ...	...	...	...	...
	Clase N	f_{N1}	f_{N2}	...	f_{NN}

$$\kappa = \frac{Pr(a) - Pr(e)}{1 - Pr(e)} \quad (9)$$

$$Pr(a) = \frac{1}{n} \sum_{i=1}^{N} f_{ii} \quad (10)$$

$$Pr(e) = \sum_{k=1}^{N} \left[\frac{1}{n^2} \left(\sum_{i=1}^{N} f_{ik} * \sum_{j=1}^{N} f_{kj} \right) \right] \quad (11)$$

Otra forma de interpretar los resultado se el siguiente:

< 0 Acuerdo deficiente

0.01 - 0.20 Acuerdo leve

0.21 - 0.40 Acuerdo justo

0.41 - 0.60 Acuerdo moderado

0.61 - 0.80 Acuerdo sustancial

0.81 - 1.00 Acuerdo casi perfecto