

Mactor Report

Ficheiro Tese Mactor



SUMMARY

I. ACTOR PRESENTATION	4
1. List of actors	4
II. OBJECTIVE PRESENTATION	4
1. List of objectives.....	4
III. DATA INPUT MATRICES	4
1. Matrix of Direct Influences (MDI).....	4
2. Valued position matrix (2MAO)	5
IV. RESULTS OF THE STUDY	5
1. Direct and indirect influences	5
1. Matrix of Direct and Indirect Influences (MDII)	5
2. Map of influences and dependences between actors	6
3. Net scale of influences (NS).....	7
4. MDII competitiveness	7
5. Matrix of Maxima Direct and Indirect Influences (MMDII).....	17
6. MMDII competitiveness	18
2. Actors Objectives Relationship	28
1. Order 1 relationship.....	28
2. Order 2 relationship.....	29
3. Order 3 relationship.....	30
3. Convergence between actors	31
1. Order 1 convergence	32
2. Order 2 convergence	34
3. Order 3 convergence	36
4. Divergence between actors	38
1. Order 1 divergence	38
2. Order 2 divergence	40
3. Order 3 Divergence	42
5. Actor ambivalence	44
1. Actor's ambivalence matrix.....	44
2. Histogram of actor's ambivalence	45
6. Net distance between objectives	45
1. Map of net distances between objectives	45
2. Graph of net distances between objectives.....	46
7. Net distances between actors	47
1. Map of net distances between actors.....	47
2. Graph of net distances between actors	48





I. ACTOR PRESENTATION

1. LIST OF ACTORS

1. Governo-Ministério da Saúde (GMS)
2. Administração do Hospital (ADH)
3. Direcção Clínica do Serviço (DC)
4. Coordenação Técnica (CT)
5. Médico Fisiatra (Dr.)
6. Fisioterapeuta (FT)
7. Terapeuta Ocupacional (TO)
8. Terapeuta da Fala (TF)
9. Outros Profissionais do Hospital (Outros)
10. Utentes do Hospital (utentes)

II. OBJECTIVE PRESENTATION

1. LIST OF OBJECTIVES

1. Garantir a qualidade na prestação de cuidados de Saúde (Qualidade)
2. Garantir a segurança e a confiança dos utentes (SegUtentes)
3. Assegurar a participação dos utentes (ParticipUt)
4. Promover a autonomia profissional (AutonProf)
5. Melhorar os processos de tomada de decisão (TomadaDec)
6. Melhorar a organização do trabalho (OrgTrab)
7. Reforçar os meios tecnológicos e guidelines (MeiosTecGu)
8. Promover a formação contínua (FormaçãoCo)
9. Promover o consenso no ambiente hospitalar (ConsensoAH)
10. Implementar um sistema de avaliação do desempenho (SistAD)

III. DATA INPUT MATRICES

1. MATRIX OF DIRECT INFLUENCES (MDI)

The Matrix of Direct Influences (MDI) Actor X Actor created from the actors' strategies table, describes the direct influences actors have on each other.

MDI	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes
GMS	0	3	3	1	1	1	1	1	1	1
ADH	3	0	3	3	2	2	2	2	1	1
DC	2	3	0	3	3	3	3	3	2	2
CT	2	3	3	0	3	3	2	2	2	3
Dr.	1	2	3	2	0	3	3	3	2	2
FT	1	2	2	3	2	0	3	3	3	3
TO	1	2	2	3	2	2	0	2	2	2
TF	1	2	2	3	2	2	2	0	2	2
Outros	1	2	2	2	2	2	2	2	0	2
utentes	1	2	2	2	2	2	2	2	2	0

© LIPSOR-EPTA-MACTOR

Influences are graded from 0 to 4 according to the importance of the actor's possible jeopardy:

0: No influence

1: Operating procedures

2: Projects



- 3: Missions
- 4: Existance

2. VALUED POSITION MATRIX (2MAO)

The matrix of valued positions Actor X Objective (2MAO) provides information on the actor's stance on each objective (pro, against, neutral or indifferent) and the hierarchy of its objectives.

2MAO	Qualidade	SegUientes	ParticipUt	AutonProf	TomadaDec	OrgTrab	MeiosT ecGu	FormaçãCo	ConsensoAH	SistAD
GMS	4	4	2	2	3	3	3	3	3	4
ADH	4	4	3	3	3	3	3	3	3	4
DC	4	4	3	3	3	3	3	3	3	4
CT	4	4	3	3	3	4	3	4	3	4
Dr.	3	4	3	3	3	3	4	4	3	3
FT	4	4	4	4	3	3	3	3	3	3
TO	4	4	4	4	3	4	3	4	4	3
TF	4	4	4	4	3	4	3	4	3	3
Outros	3	4	3	3	3	4	3	3	3	3
utentes	3	3	3	2	2	3	3	2	3	2

© LIPSOR-EPITA-MACTOR

The sign indicates whether the actor is likely to reach objective or not.

0: Objective has a bleak outcome

1: Objective jeopardises the actor's operating procedures (management, etc...) / is vital for its operating procedures

2: Objective jeopardises the success of the actor's projects / is vital for the success of its projects

3: Objective jeopardises the accomplishment of the actor's mission / is indispensable for its missions

4: Objective jeopardises the actor's existence / is indispensable for its existence

IV. RESULTS OF THE STUDY

1. DIRECT AND INDIRECT INFLUENCES

1. Matrix of Direct and Indirect Influences (MDII)

The MDII matrix determines the direct or indirect influences of order 2 between actors. The utility of this matrix is its more complete vision of the games of competitiveness (an actor can reduce the number of choices of another by influencing it through an intermediary actor). The "sum" operation used to calculate the MDII does not produce (in this new matrix) the same scale of intensities adopted to evaluate direct influences in MDI. Despite this, values in MDII are a good indicator of the importance of direct and indirect influences actors have on each other. Two indicators are calculated from the MDII:

- The degree of direct and indirect influence of each actor (Ii, by summing rows).
- The degree of direct and indirect dependence of each actor (Di, by summing columns).

MDII	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes	Ii
GMS	12	13	13	13	12	12	12	12	10	10	107
ADH	13	19	19	17	17	17	16	16	15	16	146
DC	13	20	21	22	19	20	20	20	17	18	169
CT	13	20	21	20	19	20	20	20	17	18	168
Dr.	12	18	18	21	18	19	20	20	17	17	162
FT	12	18	18	20	18	18	18	18	17	18	157
TO	12	18	18	18	18	18	17	17	16	17	152
TF	12	18	18	18	18	18	17	17	16	17	152
Outros	12	17	17	17	17	17	17	17	16	16	147
utentes	12	17	17	17	17	17	17	17	16	16	147
Di	111	159	159	163	155	158	157	157	141	147	1507

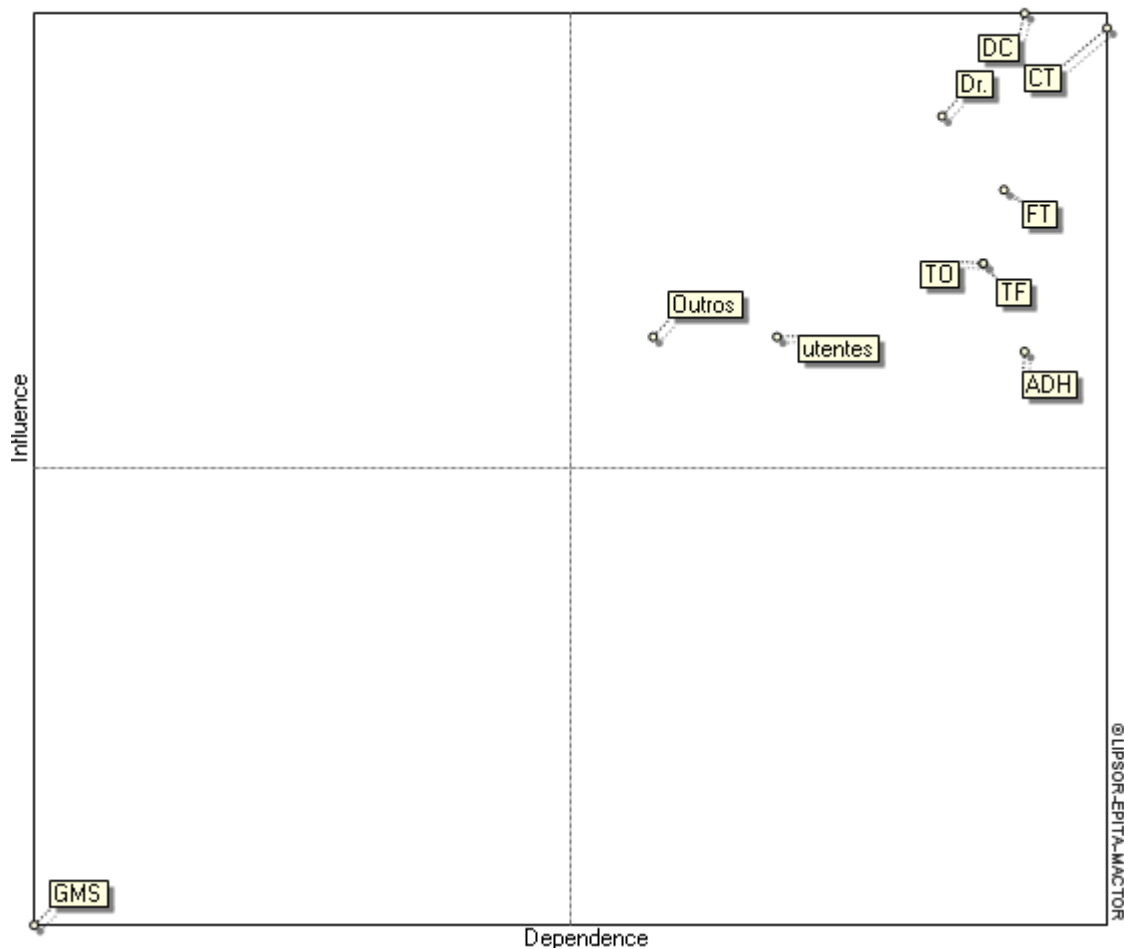
© LIPSOR-EPITA-MACTOR

Values represent direct and indirect influences between actors:
The higher the value, the more influence the actor has on the other.

2. Map of influences and dependences between actors

Map of influence and dependence between actors is a graphic representation of actors' positions with respect to influences and dependences (direct or indirect: Di and Ii) between each other. Positions are calculated automatically by the Mactor software.

Map of influences and dependences between actors



© LIPSOR-EPITA-MACTOR

3. Net scale of influences (NS)

The net scale of direct and indirect influences measures, for every couple of actors, the distance between the direct and indirect influence. Each actor exerts (receives) direct and indirect influences of order 2 (from) each actor. The net influence scale will indicate for each couple of actors the surplus influence either exerted or received. If the scale is positive (+ sign), actor i (rows of NS matrix) has more direct and indirect influence on actor j (columns of NS matrix) than it receives from this actor. This is the opposite when the scale has a negative (-) sign. The next step is to calculate for each actor the total difference of direct and indirect influences by adding up the net influence scales on the rest of the actors.

NS	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes	Sum
GMS		0	0	0	0	0	0	0	-2	-2	-4
ADH	0		-1	-3	-1	-1	-2	-2	-2	-1	-13
DC	0	1		1	1	2	2	2	0	1	10
CT	0	3	-1		-2	0	2	2	0	1	5
Dr.	0	1	-1	2		1	2	2	0	0	7
FT	0	1	-2	0	-1		0	0	0	1	-1
TO	0	2	-2	-2	-2	0		0	-1	0	-5
TF	0	2	-2	-2	-2	0	0		-1	0	-5
Outros	2	2	0	0	0	0	1	1		0	6
utentes	2	1	-1	-1	0	-1	0	0	0		0

© LIPSOR-EPITA-MACTOR

Values are relative whole numbers:

The (+) sign indicates the actor exerts more influence than it receives.

The (-) sign indicates the actor exerts less influence than it receives.

4. MDII competitiveness

a) MDII competitiveness vector

The Matrix of Direct an Indirect Influences (MDII) provides two types of useful information:

- The direct and indirect influences actor i has on actor j (MDII)_{ij} where i!=j and are equivalent, by definition, to the direct and indirect dependence actor j has with respect to actor i.

- The indirect influences actor i has on itself coming through an intermediary actor. This is called retroaction (MDII)_{ii}. When an actor is more competitive so will be its influence, but its dependence and retroaction will be quite weak. It is foolish to think that only the actor's influence measures its competitiveness. An actor can be very influential, be also very dependent and at the same time be very retroactive: this would result in a weak competitiveness. However, an actor being moderately influential, and having no dependence or retroaction will be very competitive.

	Ri
GMS	0,70
ADH	0,91
DC	1,14
CT	1,13
Dr.	1,10
FT	1,04
TO	1,00
TF	1,00
Outros	1,00
utentes	0,98

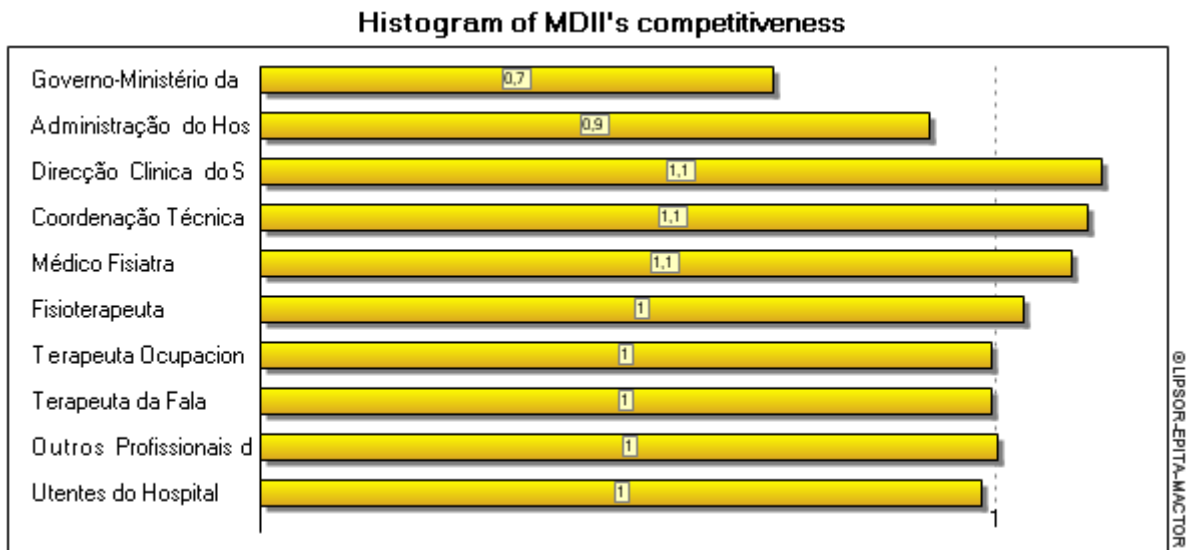
© LIPSOR-EPITA-MACTOR

Ri* is the competitiveness of actor i considering its max: influences; direct and indirect dependence; and feedback.

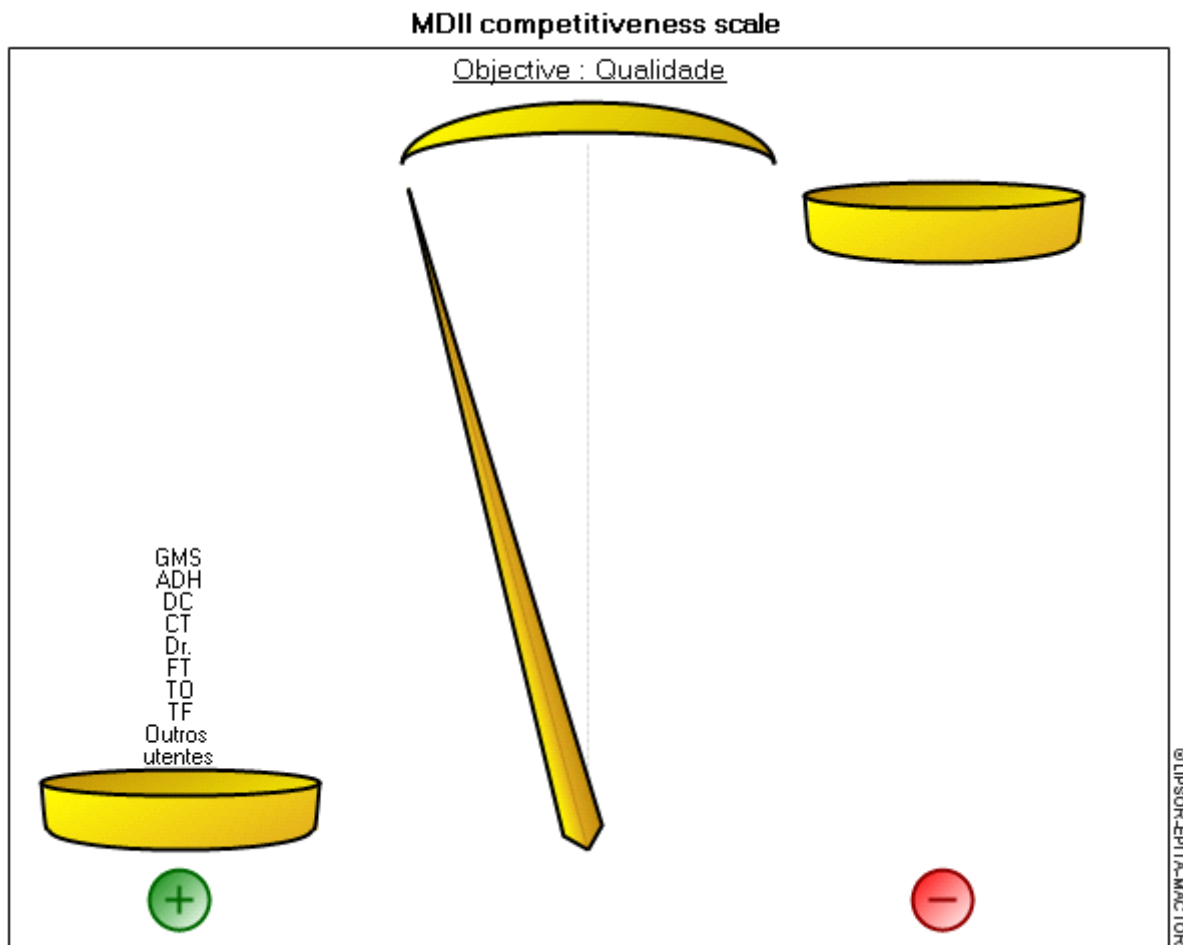


b) Histogram of MDII's competitiveness

The MDII competitiveness histogram is created from the MDII competitiveness vector.



MDII competitiveness scale - Objective : Garantir a qualidade na prestação de cuidados de Saúde



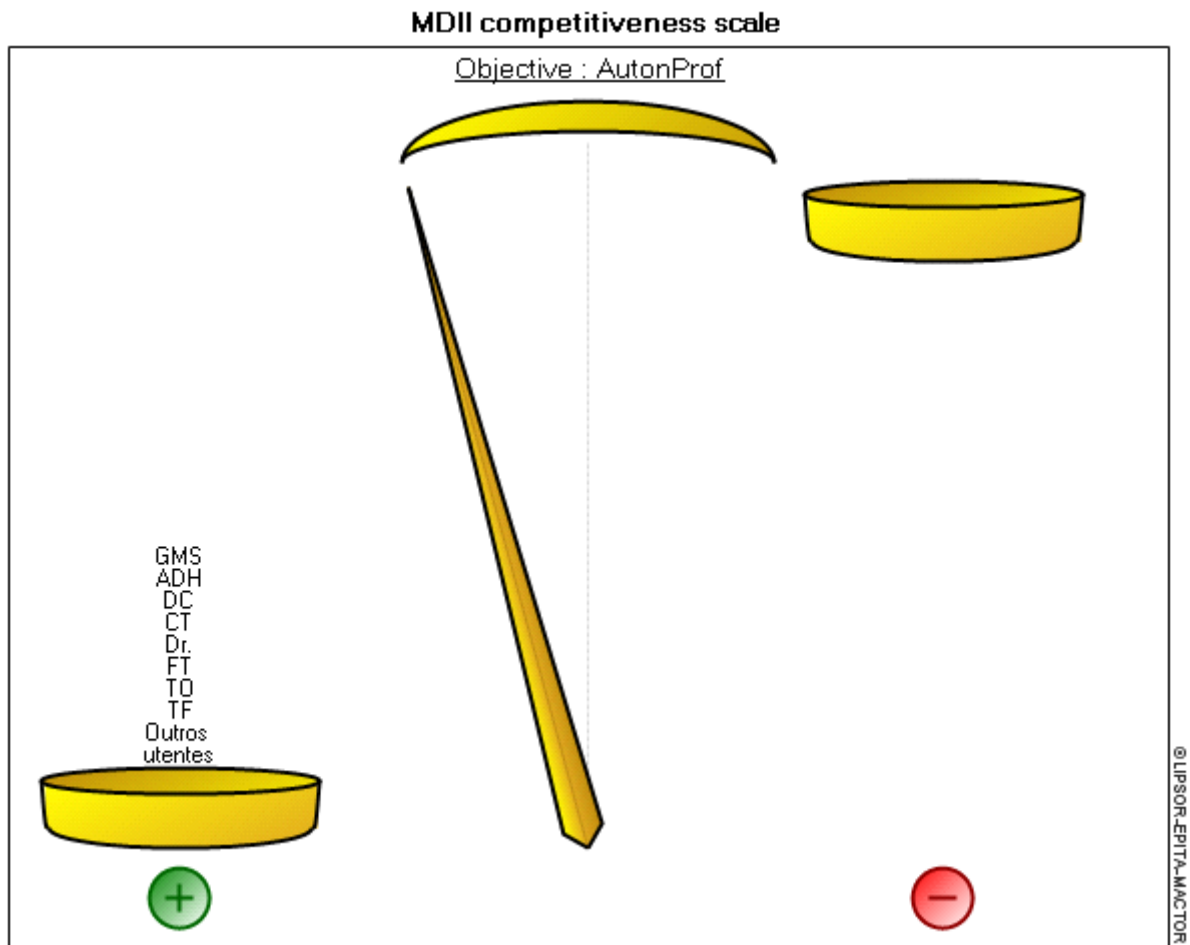
MDII competitiveness scale - Objective : Garantir a segurança e a confiança dos utentes



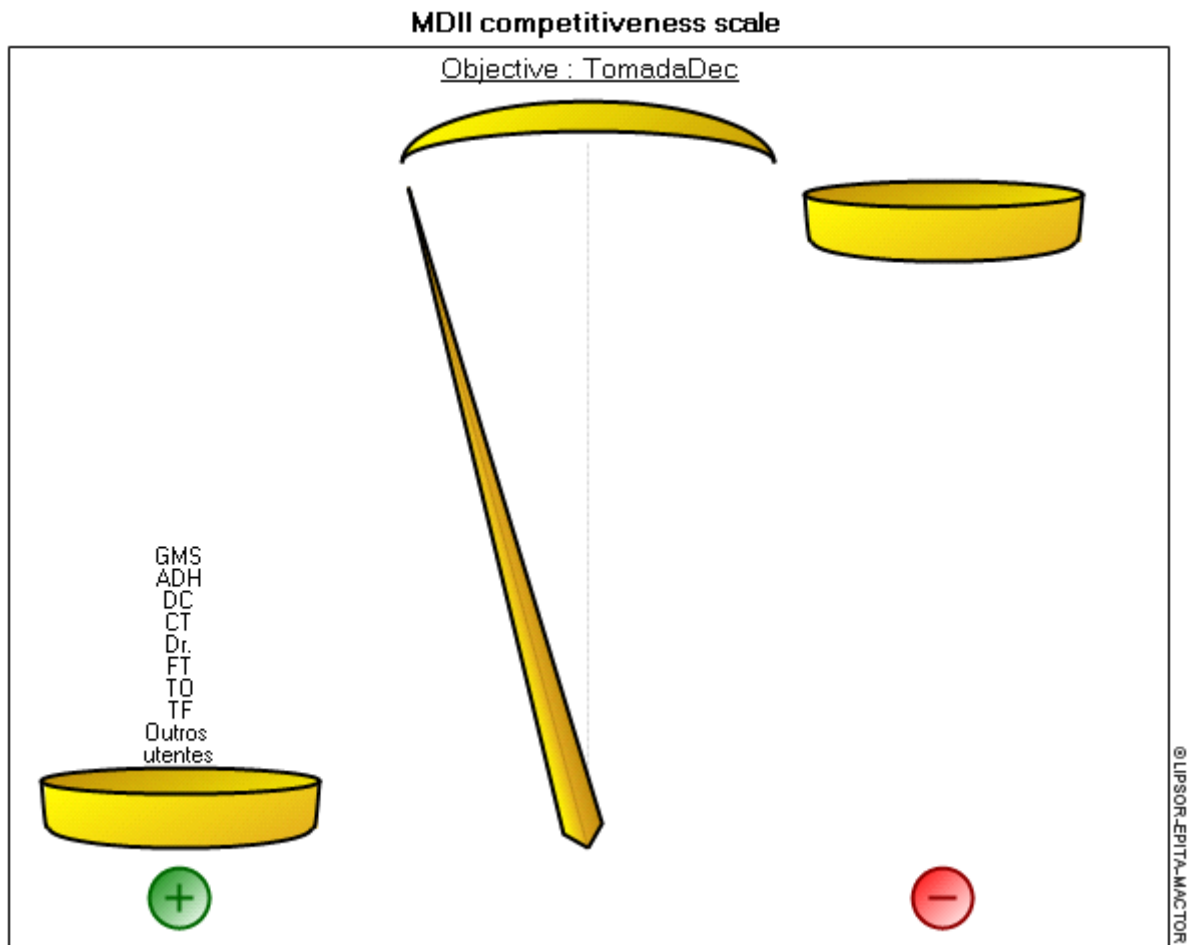
MDII competitiveness scale - Objective : Assegurar a participação dos utentes



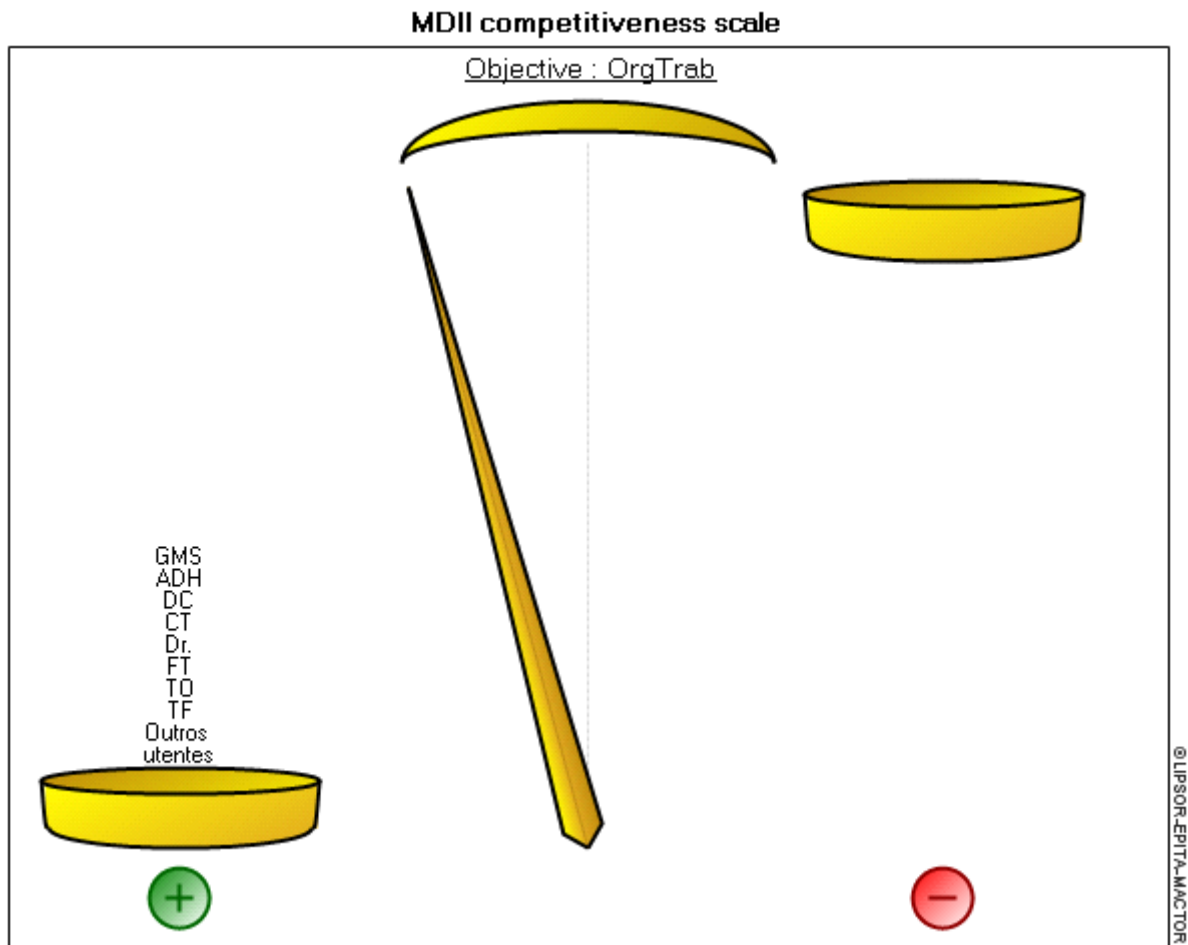
MDII competitiveness scale - Objective : Promover a autonomia profissional



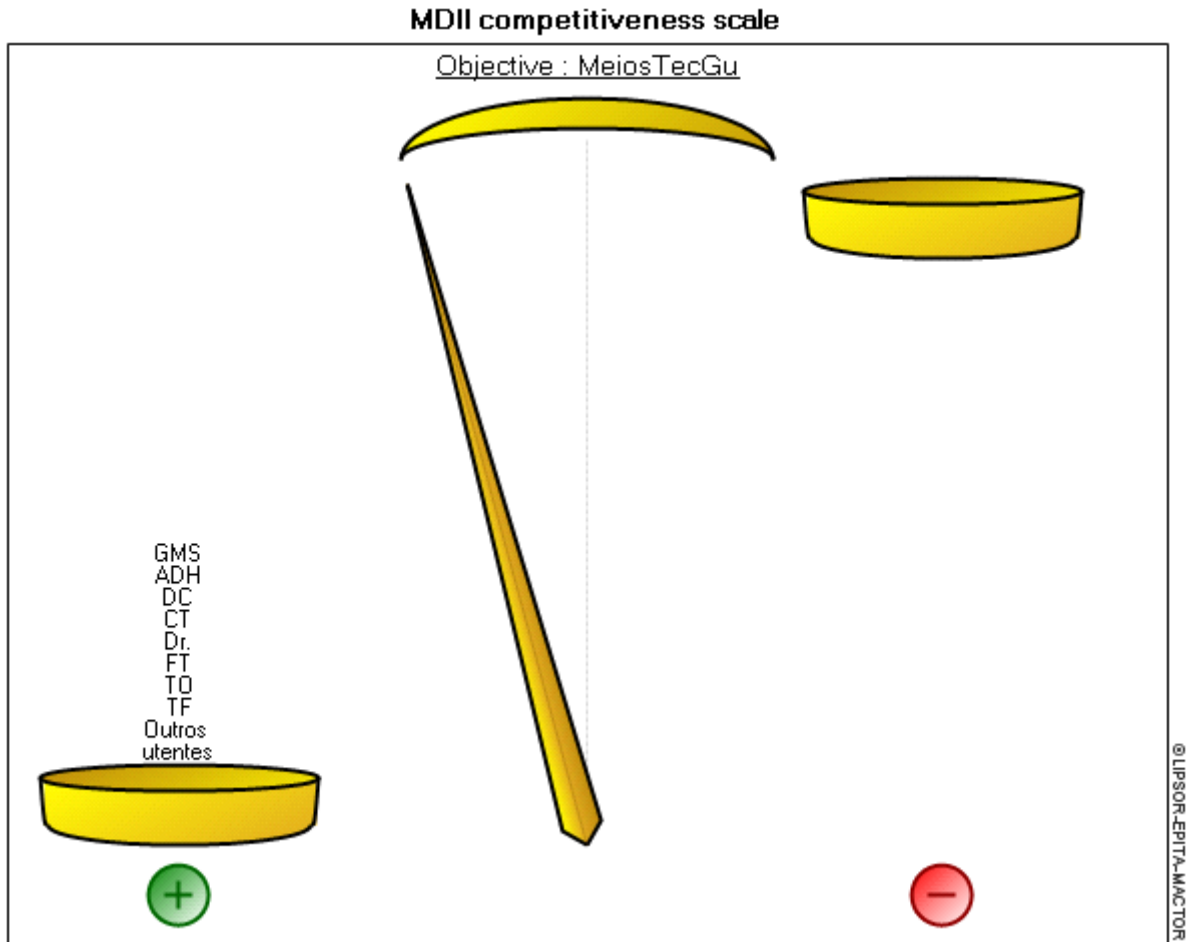
MDII competitiveness scale - Objective : Melhorar os processos de tomada de decisão



MDII competitiveness scale - Objective : Melhorar a organização do trabalho



MDII competitiveness scale - Objective : Reforçar os meios tecnológicos e guidelines



MDII competitiveness scale - Objective : Promover a formação contínua



MDII competitiveness scale - Objective : Promover o consenso no ambiente hospitalar



5. Matrix of Maxima Direct and Indirect Influences (MMDII)

The MMDII is employed to determine the maximum level of influence an actor can have on another, either directly or indirectly (through an intermediary actor). However, in the MDII matrix we lose the sense the simple meaning used to construct the scale of intensities (of direct influences in the MDI matrix), the MMDII conserves this scale. There are two interesting results given by the MMDII:

- The degree of direct and indirect influence maxima of every actor ($IMAX_i$) is calculated by adding the rows.
- The degree of direct and indirect dependence maxima of every actor ($DMAX_i$) is calculated by adding the columns.

MMDII	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes	IMAXi
GMS	0	3	3	3	3	3	3	3	2	2	25
ADH	3	0	3	3	3	3	3	3	2	3	26
DC	3	3	0	3	3	3	3	3	3	3	27
CT	3	3	3	0	3	3	3	3	3	3	27
Dr.	2	3	3	3	0	3	3	3	3	3	26
FT	2	3	3	3	3	0	3	3	3	3	26
TO	2	3	3	3	3	3	0	2	2	3	24
TF	2	3	3	3	3	3	2	0	2	3	24
Outros	2	2	2	2	2	2	2	2	0	2	18
utentes	2	2	2	2	2	2	2	2	2	0	18
DMAxi	21	25	25	25	25	25	24	24	22	25	241

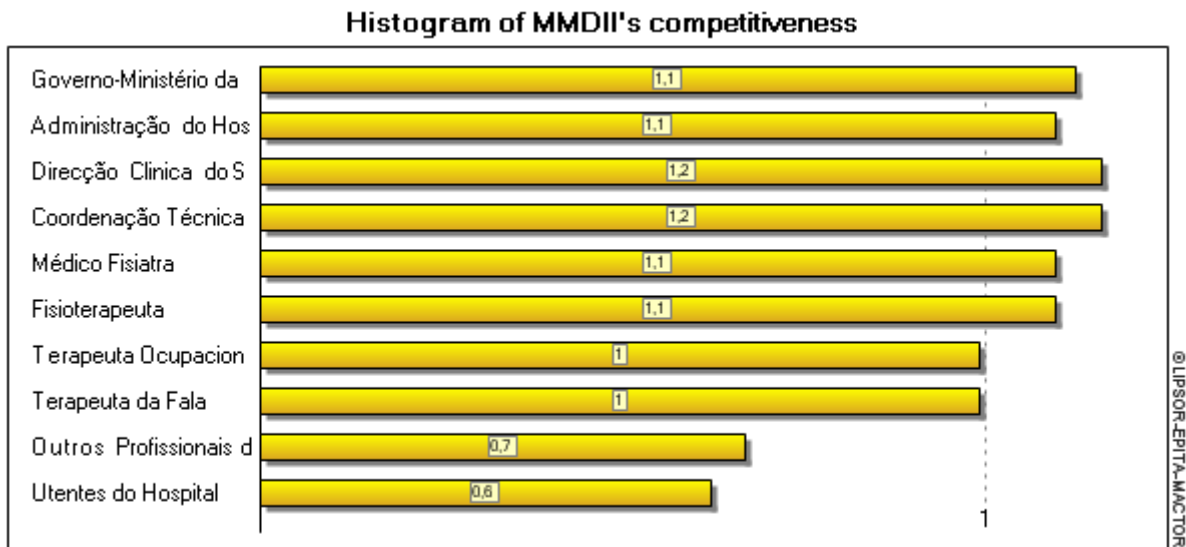
© LIPSOR-EPITA-MACTOR

Values represent maximum direct and indirect influences between actors:
The higher the value, the more influence the actor has on the other.

6. MMDII competitiveness

a) Histogram of MMDII's competitiveness

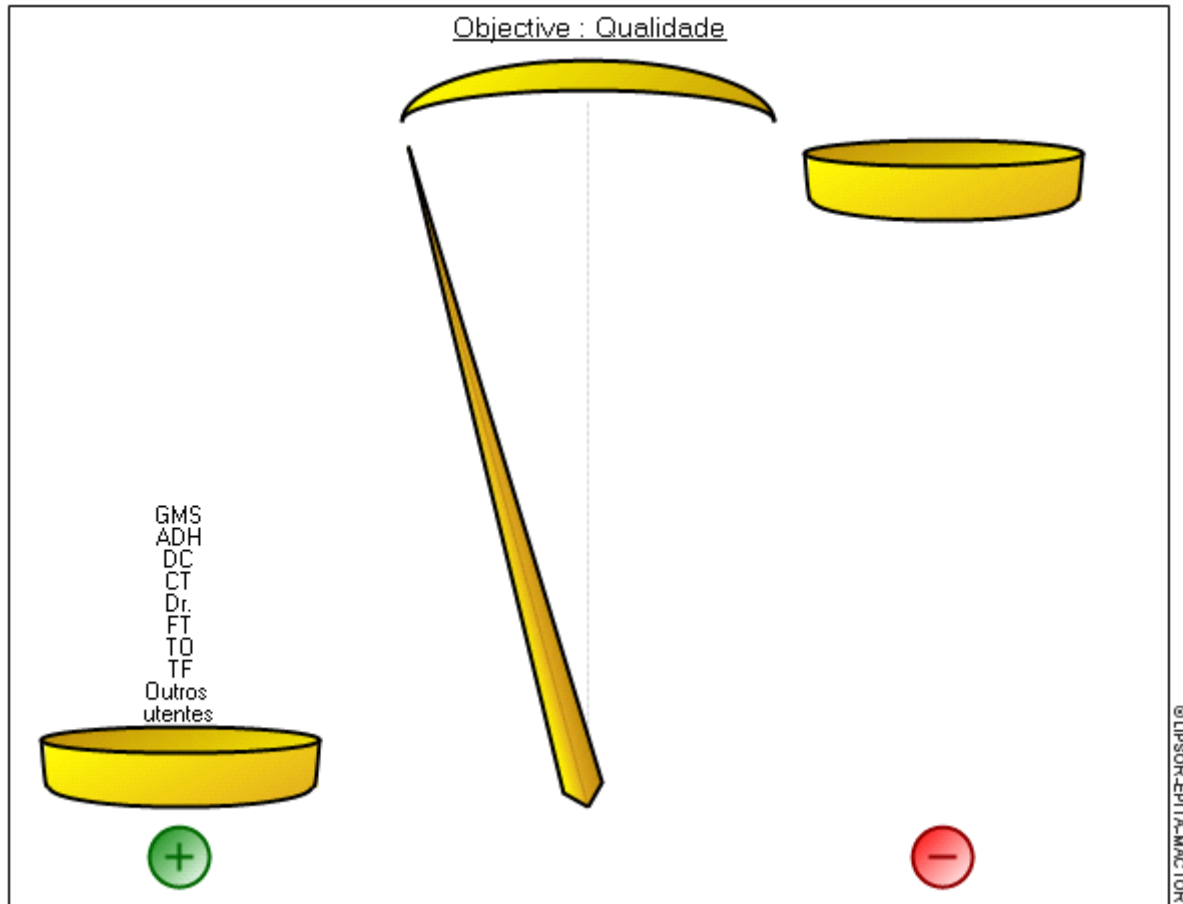
The MMDII competitiveness histogram is created from the MMDII competitiveness vector.



© LIPSOR-EPITA-MACTOR

Position scale by valued objectives weighted competitiveness - Objective : Garantir a qualidade na prestação de cuidados de Saúde

Position scale by valued objectives weighted competitiveness



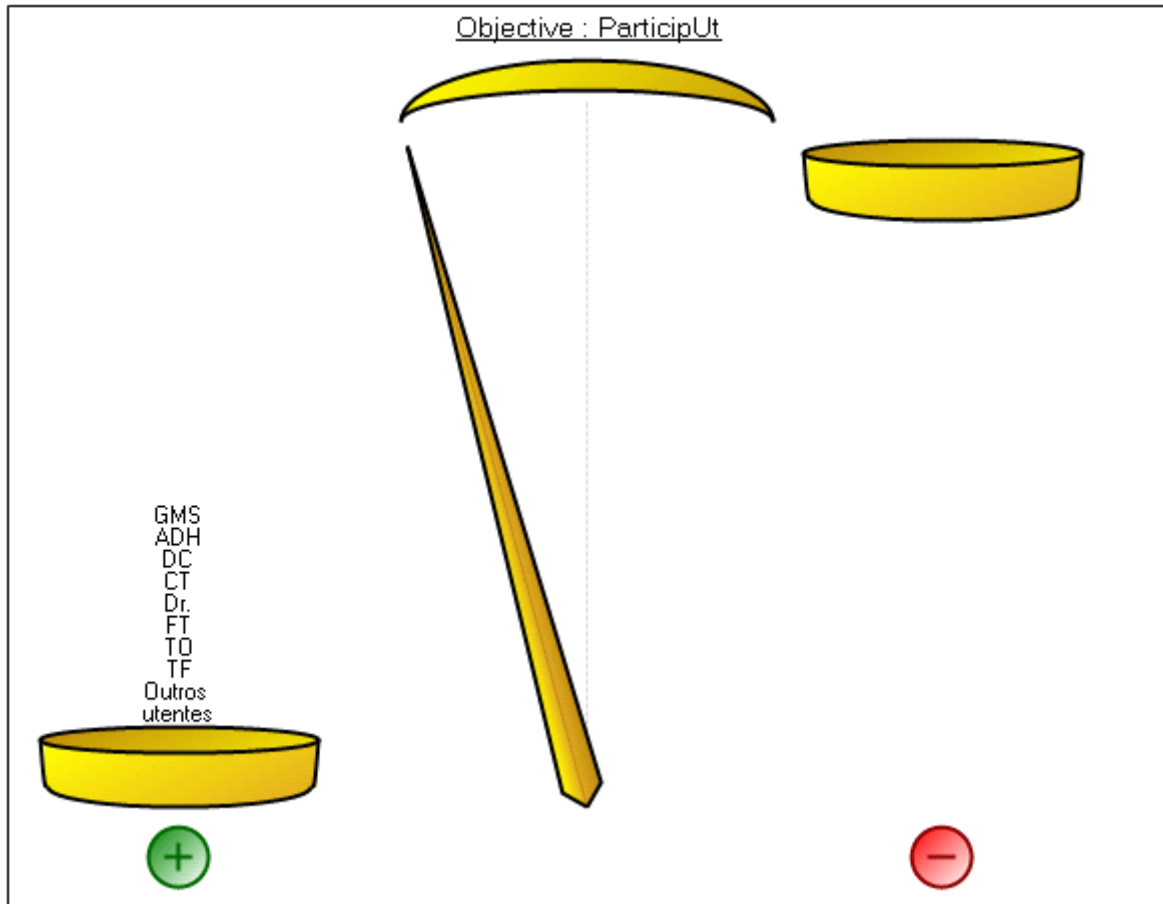
Position scale by valued objectives weighted competitiveness - Objective : Garantir a segurança e a confiança dos utentes

Position scale by valued objectives weighted competitiveness



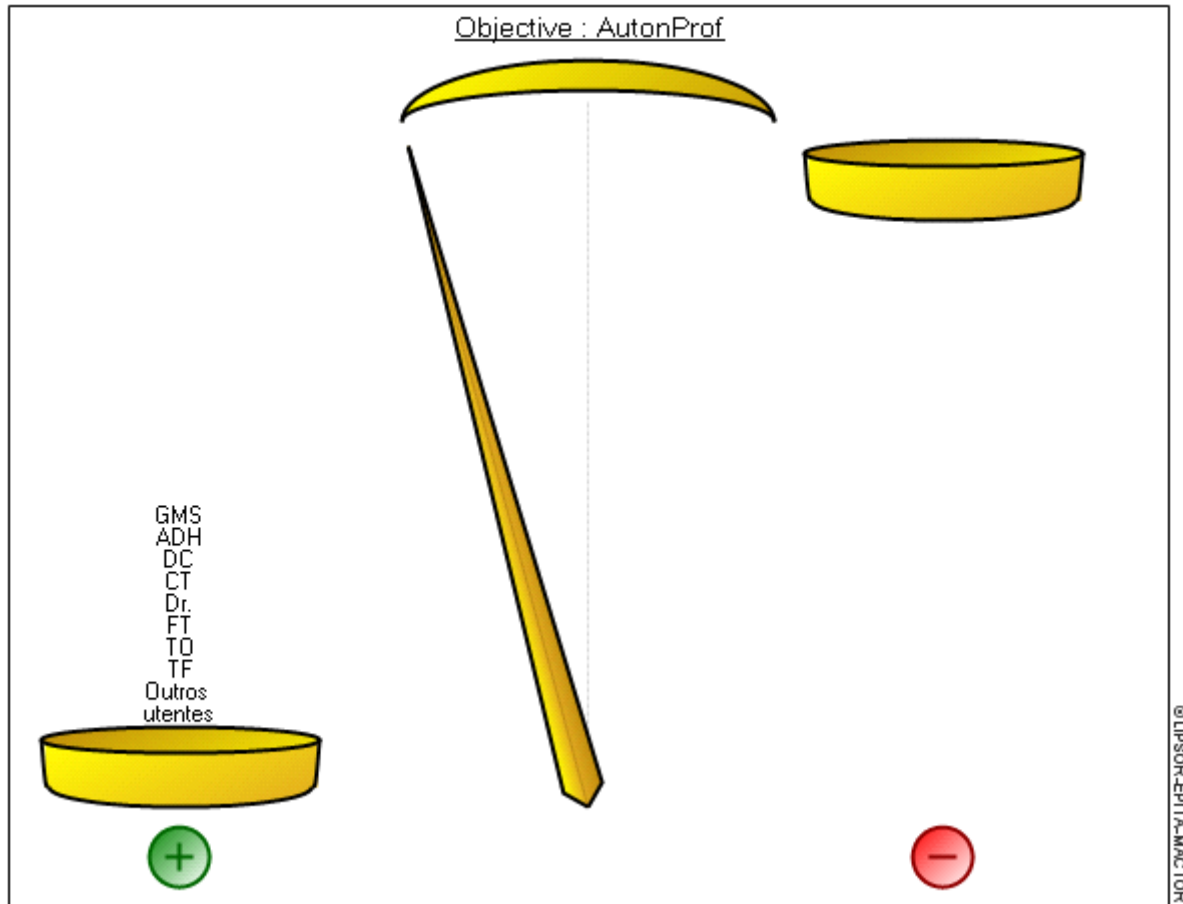
Position scale by valued objectives weighted competitiveness - Objective : Assegurar a participação dos utentes

Position scale by valued objectives weighted competitiveness



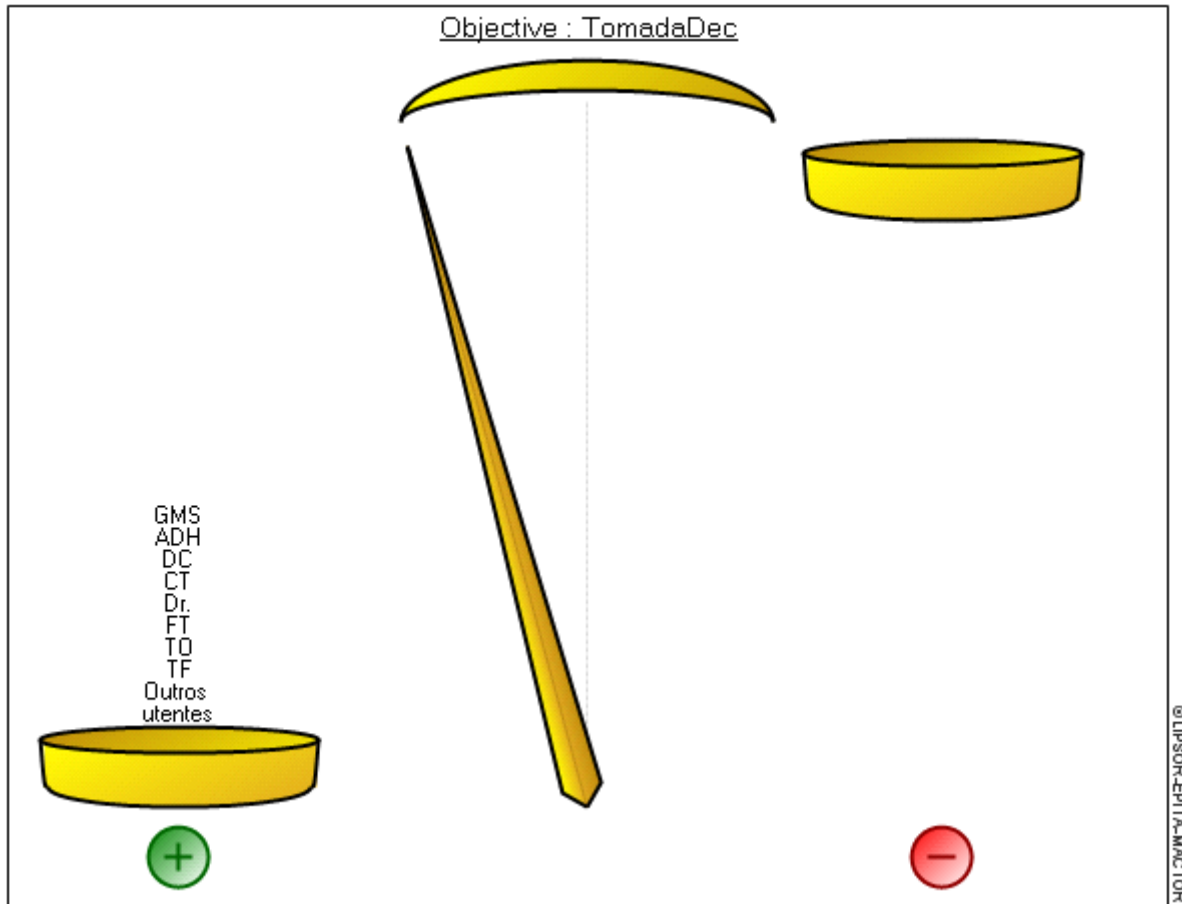
Position scale by valued objectives weighted competitiveness - Objective : Promover a autonomia profissional

Position scale by valued objectives weighted competitiveness



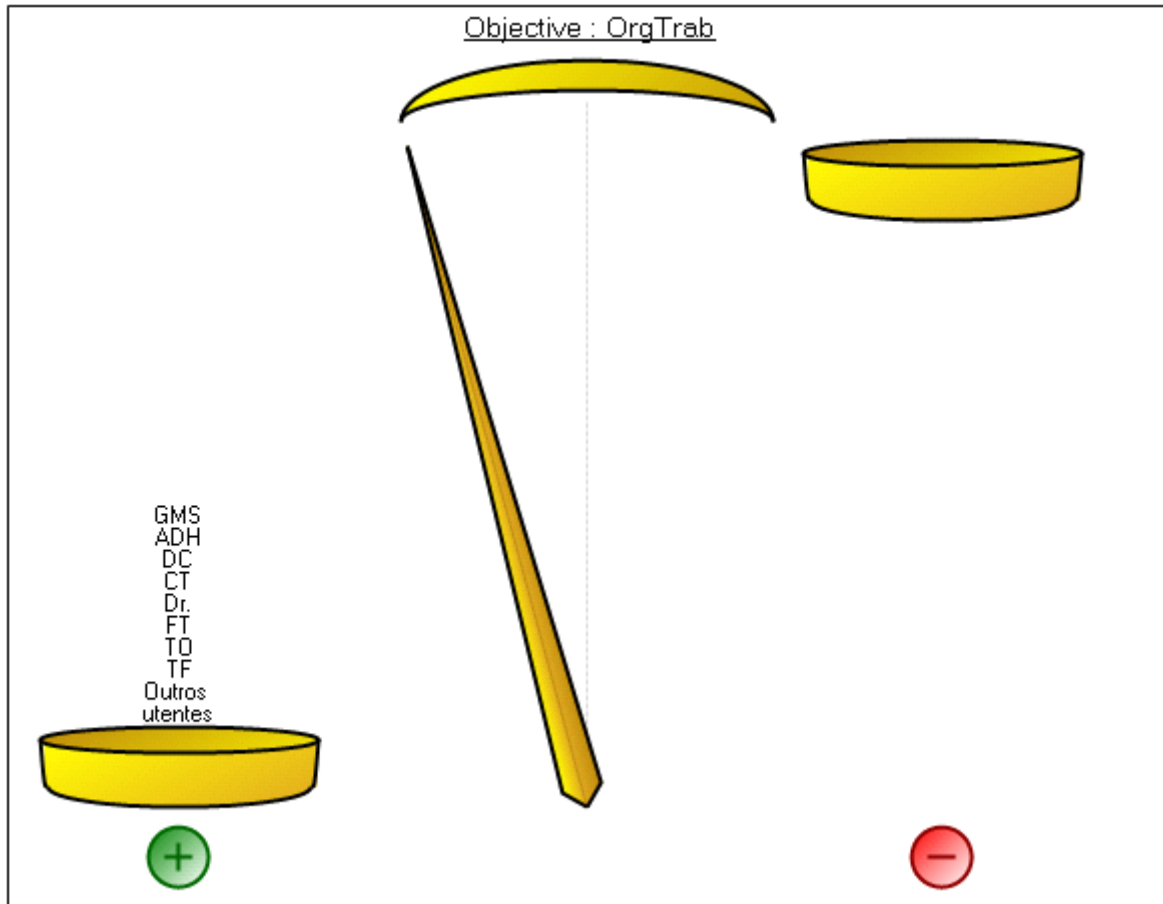
Position scale by valued objectives weighted competitiveness - Objective : Melhorar os processos de tomada de decisão

Position scale by valued objectives weighted competitiveness



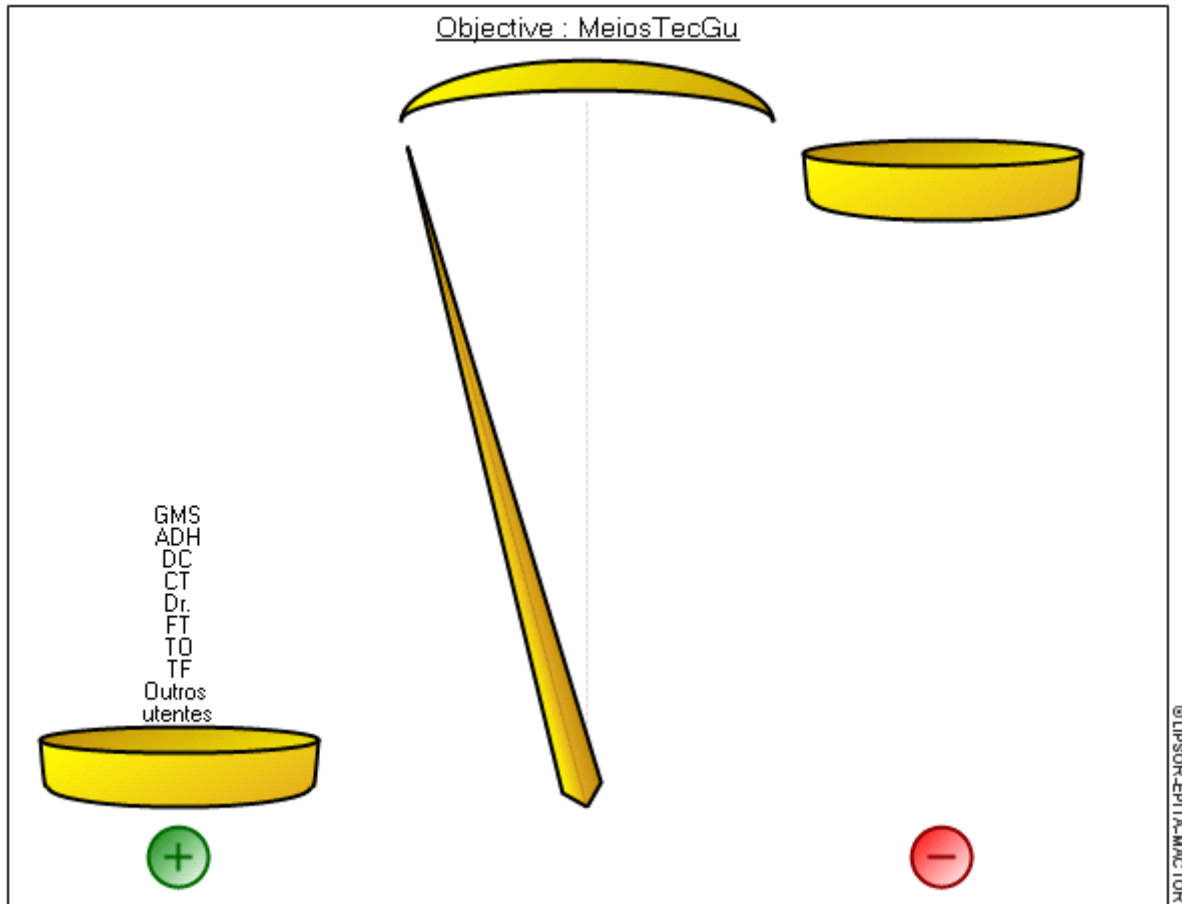
Position scale by valued objectives weighted competitiveness - Objective : Melhorar a organização do trabalho

Position scale by valued objectives weighted competitiveness



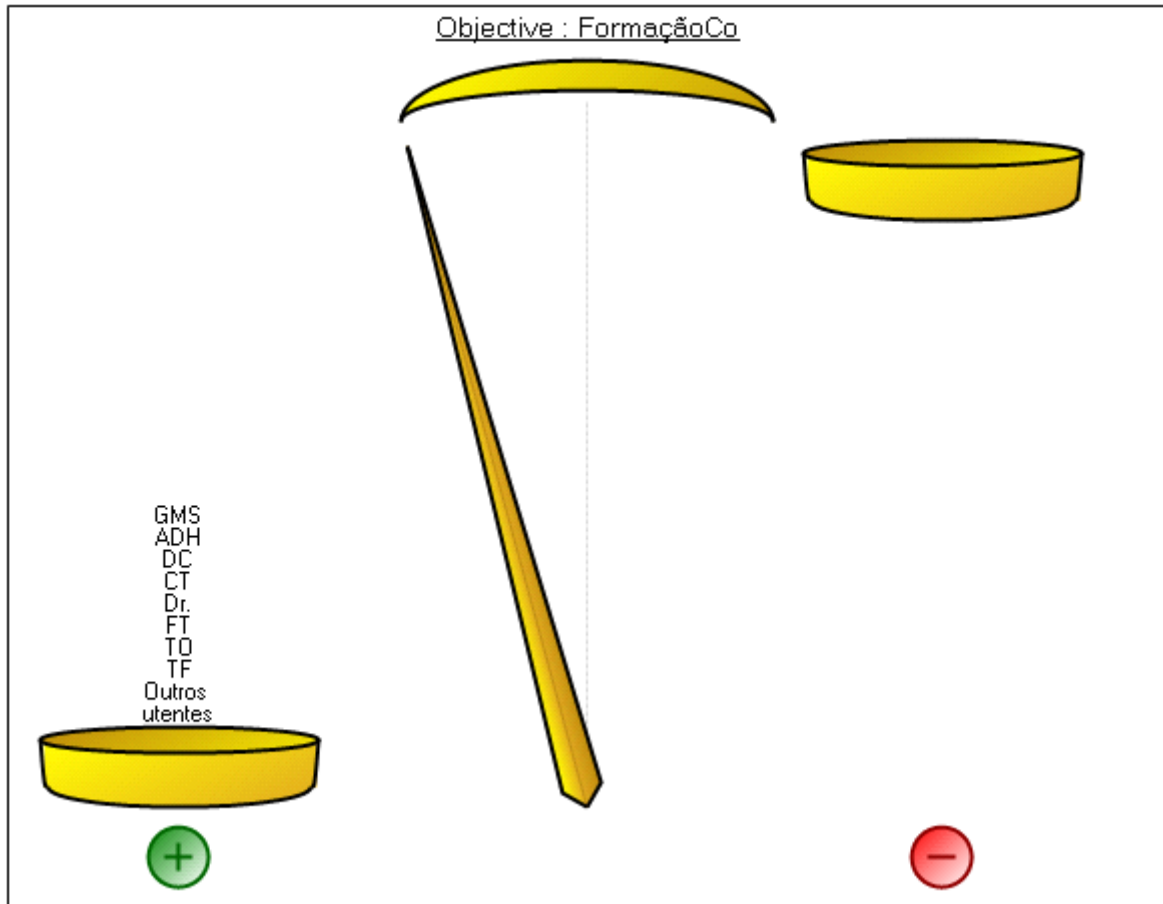
Position scale by valued objectives weighted competitiveness - Objective : Reforçar os meios tecnológicos e guidelines

Position scale by valued objectives weighted competitiveness



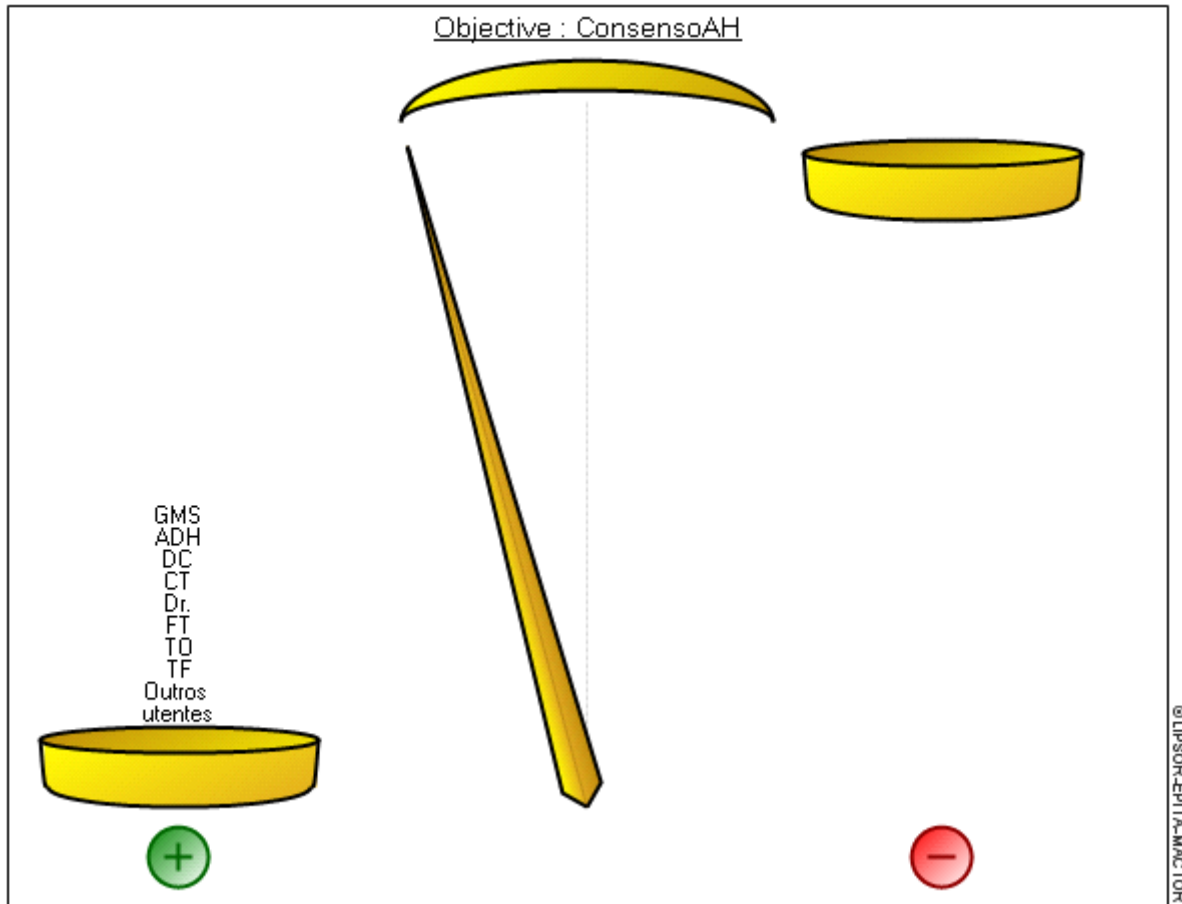
Position scale by valued objectives weighted competitiveness - Objective : Promover a formação contínua

Position scale by valued objectives weighted competitiveness



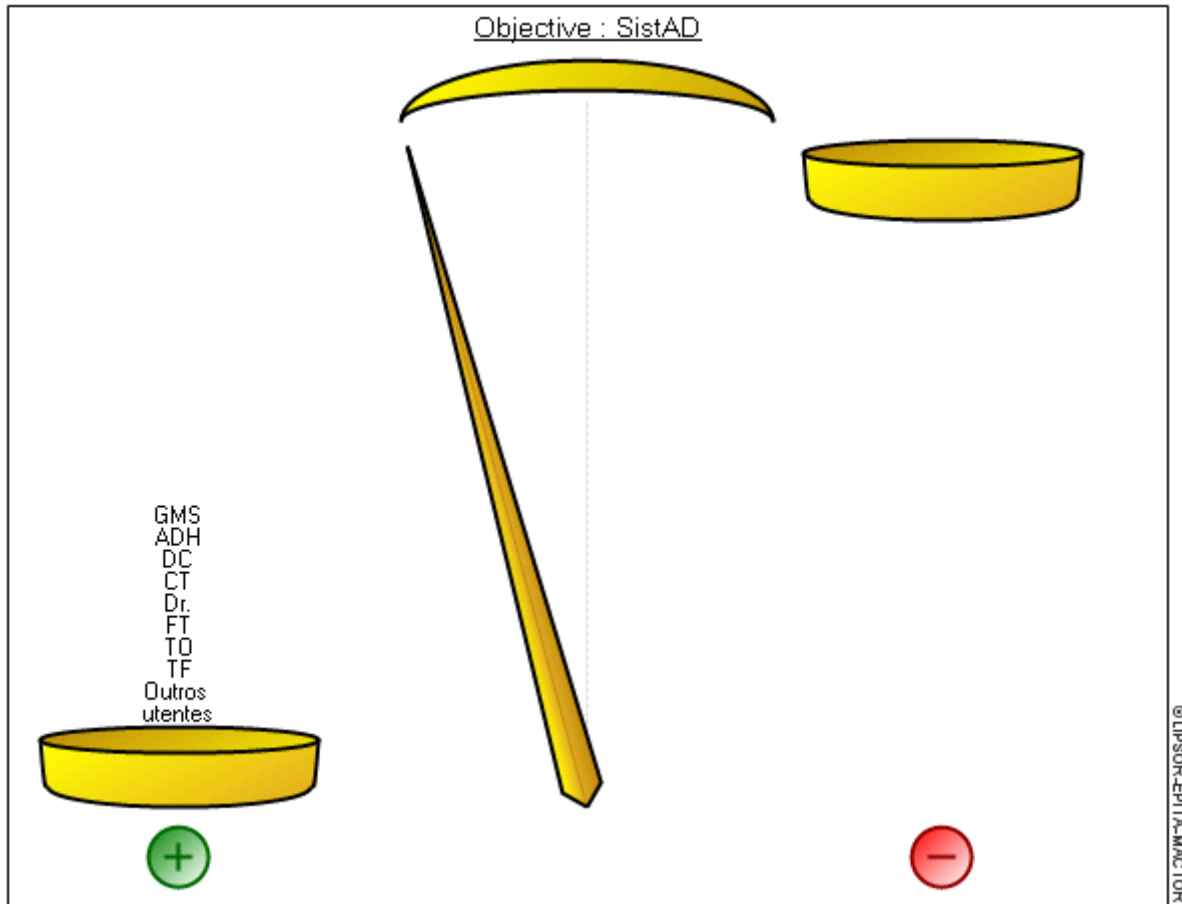
Position scale by valued objectives weighted competitiveness - Objective : Promover o consenso no ambiente hospitalar

Position scale by valued objectives weighted competitiveness



Position scale by valued objectives weighted competitiveness - Objective : Implementar um sistema de avaliação do desempenho

Position scale by valued objectives weighted competitiveness



2. ACTORS OBJECTIVES RELATIONSHIP

1. Order 1 relationship

a) Simple position matrix (1MAO)

The simple position 1MAO matrix shows the valency of each actor with respect to every objective (likely, unlikely, neutral, or indifferent). This matrix, result of Mactor's phase 3, is not made up of the initial data entries. Mactor recalculates it from 2MAO.

1MAO	Qualidade	SegUtentes	ParticipUt	AutonProf	TomadaDec	OrgTrab	MeiosT ecGu	FormaçãoCo	ConsensoAH	SistAD	Absolute sum
GMS	1	1	1	1	1	1	1	1	1	1	10
ADH	1	1	1	1	1	1	1	1	1	1	10
DC	1	1	1	1	1	1	1	1	1	1	10
CT	1	1	1	1	1	1	1	1	1	1	10
Dr.	1	1	1	1	1	1	1	1	1	1	10
FT	1	1	1	1	1	1	1	1	1	1	10
TO	1	1	1	1	1	1	1	1	1	1	10
TF	1	1	1	1	1	1	1	1	1	1	10
Outros	1	1	1	1	1	1	1	1	1	1	10
utentes	1	1	1	1	1	1	1	1	1	1	10
Number of agreements	10	10	10	10	10	10	10	10	10	10	
Number of disagreements	0	0	0	0	0	0	0	0	0	0	
Number of positions	10	10	10	10	10	10	10	10	10	10	

© LIPSOR-EPITA-MACTOR

- 1: actor unlikely to achieve objective
- 0: Neutral position
- 1: actor likely to achieve objective

2. Order 2 relationship

a) Valued position matrix (2MAO)

The 2MAO matrix specifies the actor's position on each objective (pro, against, neutral or indifferent). This matrix is the initial information given by the user and also presents marginalities.

2MAO	Qualidade	SegUtentes	ParticipUt	AutonProf	TomadaDec	OrgTrab	MeiosT ecGu	FormaçãoCo	ConsensoAH	SistAD
GMS	4	4	2	2	3	3	3	3	3	4
ADH	4	4	3	3	3	3	3	3	3	4
DC	4	4	3	3	3	3	3	3	3	4
CT	4	4	3	3	3	4	3	4	3	4
Dr.	3	4	3	3	3	3	4	4	3	3
FT	4	4	4	4	3	3	3	3	3	3
TO	4	4	4	4	3	4	3	4	4	3
TF	4	4	4	4	3	4	3	4	3	3
Outros	3	4	3	3	3	4	3	3	3	3
utentes	3	3	3	2	2	3	3	2	3	2

© LIPSOR-EPITA-MACTOR

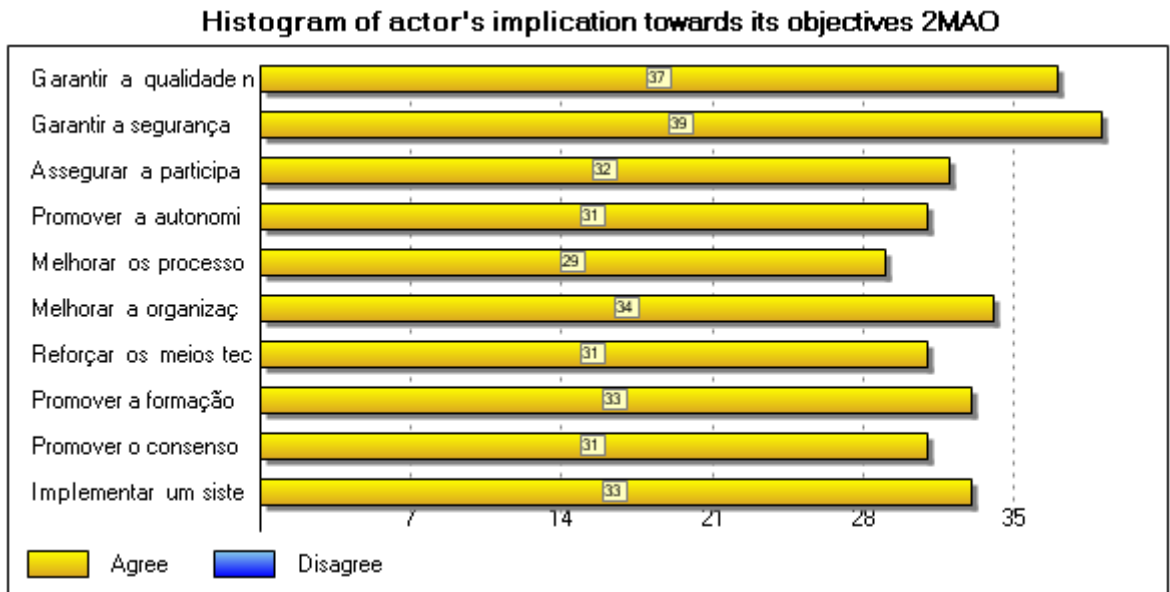
The sign indicates whether the actor is likely to reach objective or not.

- 0: Objective has a bleak outcome
- 1: Objective jeopardises the actor's operating procedures (management, etc...) / is vital for its operating procedures
- 2: Objective jeopardises the success of the actor's projects / is vital for the success of its projects
- 3: Objective jeopardises the accomplishment of the actor's mission / is indispensable for its missions
- 4: Objective jeopardises the actor's existence / is indispensable for its existence



b) Histogram of actor's implication towards its objectives 2MAO

This histogram is produced from the valued relationship matrix (order 2) between actors and objectives, 2MAO. It represents the actor's objectives mobilisation. The histogram is used to identify for each actor, the extent of its position with respect to the defined objectives, e.g. pro or against.



3. Order 3 relationship

a) Weighted valued position matrix (3MAO)

The weighted (with respect to competitiveness) valued position matrix (3MAO) describes each actor's position on every objective. This is taking into account its degree of opinion on every objective, its objective hierarchy and competitiveness between actors.

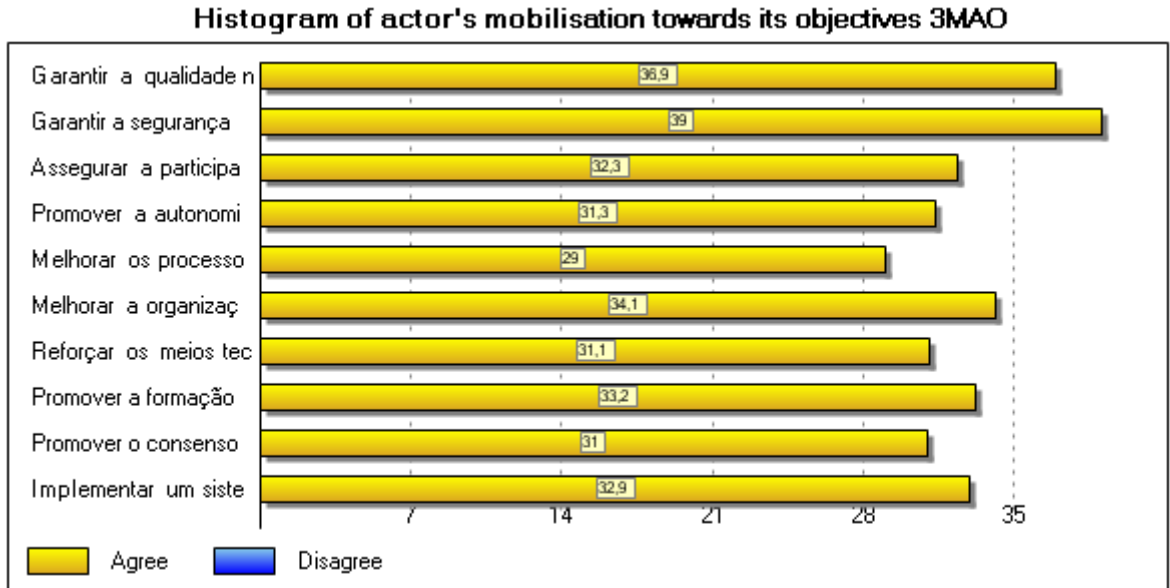
3MAO	Qualidade	Seguientes	Participut	AutonProf	TomadaDec	OrgTrab	MeiosT eecGu	FormaçãoCo	ConsensoAH	SistAD	Mobilisation
GMS	2,8	2,8	1,4	1,4	2,1	2,1	2,1	2,1	2,1	2,8	21,7
ADH	3,6	3,6	2,7	2,7	2,7	2,7	2,7	2,7	2,7	3,6	30,1
DC	4,6	4,6	3,4	3,4	3,4	3,4	3,4	3,4	3,4	4,6	37,7
CT	4,5	4,5	3,4	3,4	3,4	4,5	3,4	4,5	3,4	4,5	39,4
Dr.	3,3	4,4	3,3	3,3	3,3	3,3	4,4	4,4	3,3	3,3	36,4
FT	4,2	4,2	4,2	4,2	3,1	3,1	3,1	3,1	3,1	3,1	35,3
TO	4,0	4,0	4,0	4,0	3,0	4,0	3,0	4,0	4,0	3,0	36,8
TF	4,0	4,0	4,0	4,0	3,0	4,0	3,0	4,0	3,0	3,0	35,9
Outros	3,0	4,0	3,0	3,0	3,0	4,0	3,0	3,0	3,0	3,0	32,1
utentes	2,9	2,9	2,9	2,0	2,0	2,9	2,9	2,0	2,9	2,0	25,5
Number of agreements	36,9	39,0	32,3	31,3	29,0	34,1	31,1	33,2	31,0	32,9	
Number of disagreements	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Degree of mobilisation	36,9	39,0	32,3	31,3	29,0	34,1	31,1	33,2	31,0	32,9	

Positive values represent the actor's mobilisation towards its objectives. Negative values represent the rate of opposition.



b) Histogram of actor's mobilisation towards its objectives 3MAO

This histogram is produced from the valued relationship matrix (order 3) between actors and objectives, 3MAO. It represents the actions taken by actors towards objectives. The histogram is used to identify for each actor, the extent of its position with respect to the defined objectives, e.g. pro or against.



c) Weighted valued position matrix (3MAO)

3MAO	Qualidade	SegUientes	ParticipUt	AutonProf	TomadaDec	OrgTrab	MeiosTecGu	Formaçãoco	ConsensoAH	SisAD	Mobilisation
GMS	2,8	2,8	1,4	1,4	2,1	2,1	2,1	2,1	2,1	2,8	21,7
ADH	3,6	3,6	2,7	2,7	2,7	2,7	2,7	2,7	2,7	3,6	30,1
DC	4,6	4,6	3,4	3,4	3,4	3,4	3,4	3,4	3,4	4,6	37,7
CT	4,5	4,5	3,4	3,4	3,4	4,5	3,4	4,5	3,4	4,5	39,4
Dr.	3,3	4,4	3,3	3,3	3,3	3,3	4,4	4,4	3,3	3,3	36,4
FT	4,2	4,2	4,2	4,2	3,1	3,1	3,1	3,1	3,1	3,1	35,3
TO	4,0	4,0	4,0	4,0	3,0	4,0	3,0	4,0	4,0	3,0	36,8
TF	4,0	4,0	4,0	4,0	3,0	4,0	3,0	4,0	3,0	3,0	35,9
Outros	3,0	4,0	3,0	3,0	3,0	4,0	3,0	3,0	3,0	3,0	32,1
utentes	2,9	2,9	2,9	2,0	2,0	2,9	2,9	2,0	2,9	2,0	25,5
Number of agreements	36,9	39,0	32,3	31,3	29,0	34,1	31,1	33,2	31,0	32,9	
Number of disagreements	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Degree of mobilisation	36,9	39,0	32,3	31,3	29,0	34,1	31,1	33,2	31,0	32,9	

Positive values represent the actor's mobilisation towards its objectives. Negative values represent the rate of opposition.

3. CONVERGENCE BETWEEN ACTORS



1. Order 1 convergence

a) Convergence matrix (1CAA)

The Matrix of objectives convergences between actors or simple Convergences Actor X Actor (1CAA) identifies for a couple of actors the number of common positions they have on objectives (pro or against). This would identify the number of possible alliances. "Neutral" and "indifferent" positions (coded as "0") are not taken into consideration. This is a symmetrical matrix.

1CAA	GMS	ADH	DC	CT	D:	FT	TO	TF	Outros	utentes
GMS	0	10	10	10	10	10	10	10	10	10
ADH	10	0	10	10	10	10	10	10	10	10
DC	10	10	0	10	10	10	10	10	10	10
CT	10	10	10	0	10	10	10	10	10	10
Dr.	10	10	10	10	0	10	10	10	10	10
FT	10	10	10	10	10	0	10	10	10	10
TO	10	10	10	10	10	10	0	10	10	10
TF	10	10	10	10	10	10	10	0	10	10
Outros	10	10	10	10	10	10	10	10	0	10
utentes	10	10	10	10	10	10	10	10	10	0
Number of convergences	90	90	90	90	90	90	90	90	90	90

© LIPSOR-EPITA-MACTOR

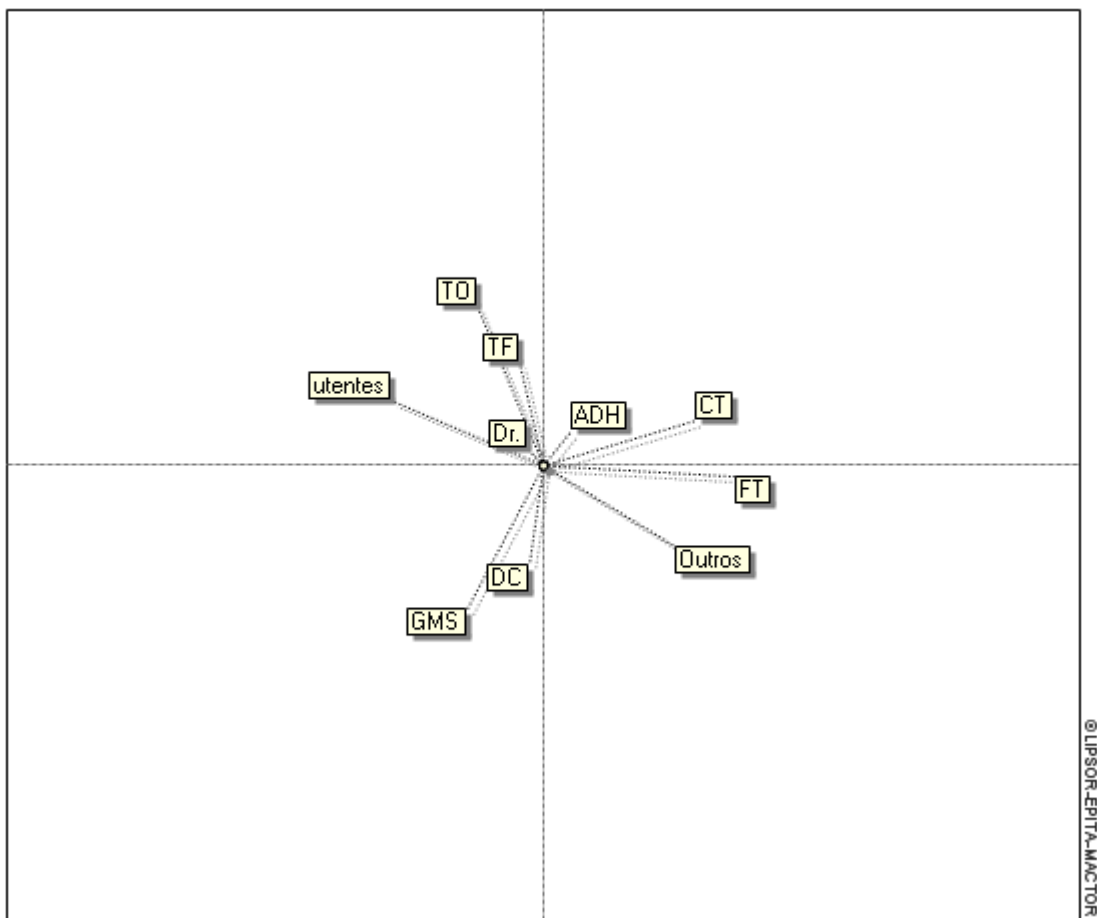
The values represent the degree of convergence: the higher the intensity, the more actors have common interests

b) Map of order 1 convergences between actors

The map of convergences between actors maps the actors with respect to their convergences (data in matrices 1CAA, 2CAA, 3CAA). That is, the closer actors are to each other, the more their convergence is intense. This map is used to create a graph of actors' convergences.



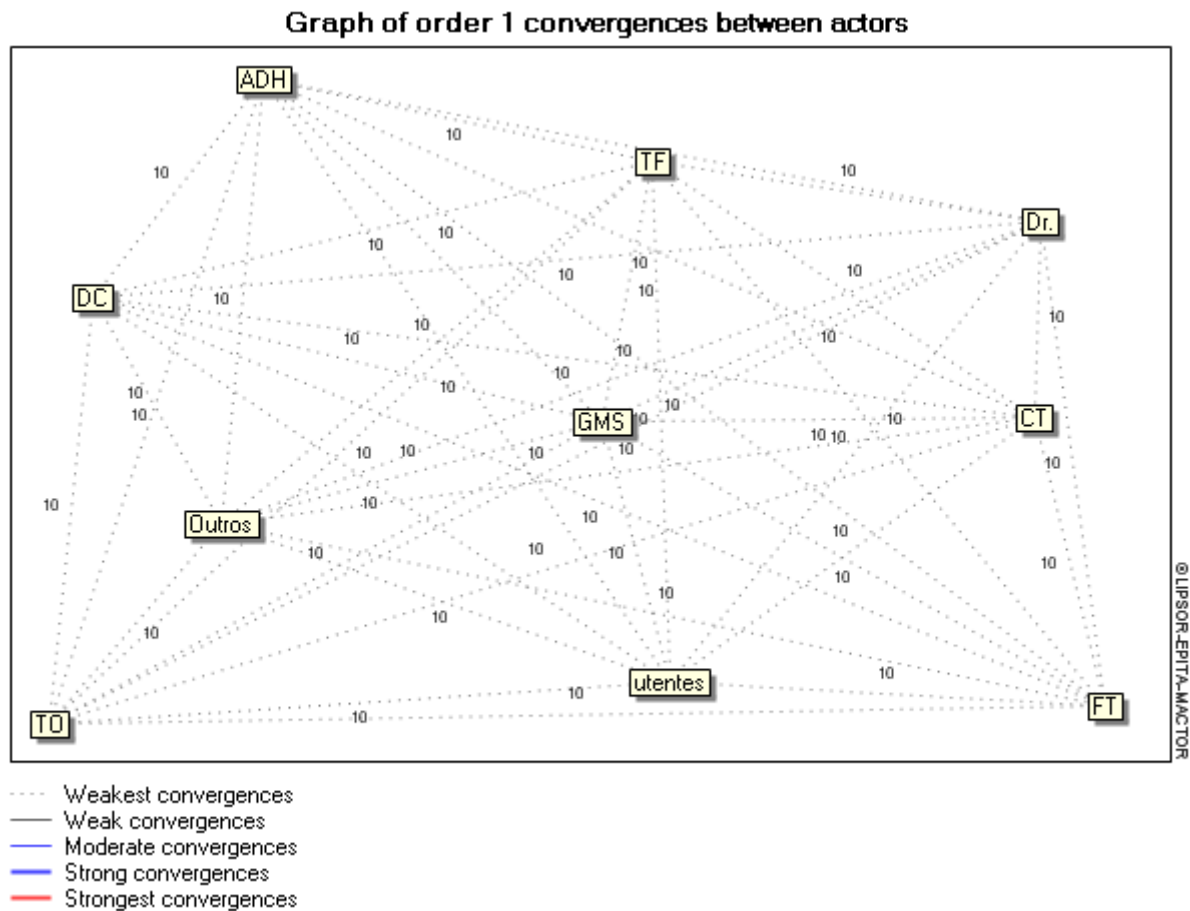
Map of order 1 convergences between actors



©LIPSOR-EPITA-MACTOR

c) Graph of order 1 convergences between actors

The graph of convergences between actors maps the actors with respect to their convergences (data in matrices 1CAA, 2CAA, 3CAA). That is, the closer actors are to each other, the more their convergence is intense.



2. Order 2 convergence

a) Valued convergence matrix (2CAA)

The valued convergence matrix or Valued Convergence Actors X Actors (2CAA) is related to the Matrix of valued positions Actors X Objectives (2MAO). This calculates the average convergence intensity between two actors, when these have the same degree (pro or against the objective). The values in this matrix do not measure the number of potential alliances (as in 1CAA), but the alliance intensity with the objectives hierarchy (preferences) of the couple of actors. This is a symmetrical matrix.

2CAA	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utenes
GMS	0,0	32,0	32,0	33,0	32,0	32,5	34,0	33,5	31,5	28,5
ADH	32,0	0,0	33,0	34,0	33,0	33,5	35,0	34,5	32,5	29,5
DC	32,0	33,0	0,0	34,0	33,0	33,5	35,0	34,5	32,5	29,5
CT	33,0	34,0	34,0	0,0	34,0	34,5	36,0	35,5	33,5	30,5
Dr.	32,0	33,0	33,0	34,0	0,0	33,5	35,0	34,5	32,5	29,5
FT	32,5	33,5	33,5	34,5	33,5	0,0	35,5	35,0	33,0	30,0
TO	34,0	35,0	35,0	36,0	35,0	35,5	0,0	36,5	34,5	31,5
TF	33,5	34,5	34,5	35,5	34,5	35,0	36,5	0,0	34,0	31,0
Outros	31,5	32,5	32,5	33,5	32,5	33,0	34,5	34,0	0,0	29,0
utenes	28,5	29,5	29,5	30,5	29,5	30,0	31,5	31,0	29,0	0,0
Number of convergences	289,0	297,0	297,0	305,0	297,0	301,0	313,0	309,0	293,0	269,0
Degree of convergence (%)	100,0									

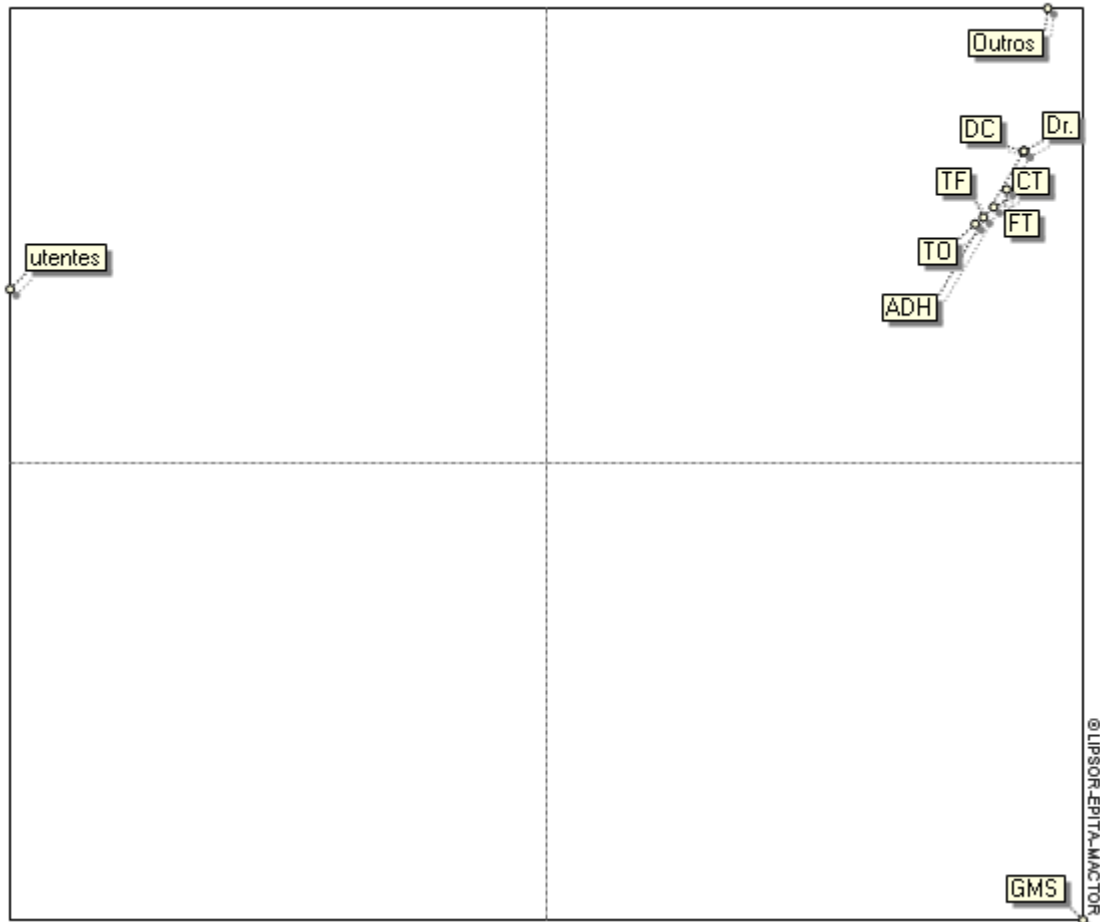
© LIPSOR-EPITA-MACTOR

The values represent the degree of convergence: the higher the intensity, the more actors have common interests

b) Map of order 2 convergences between actors

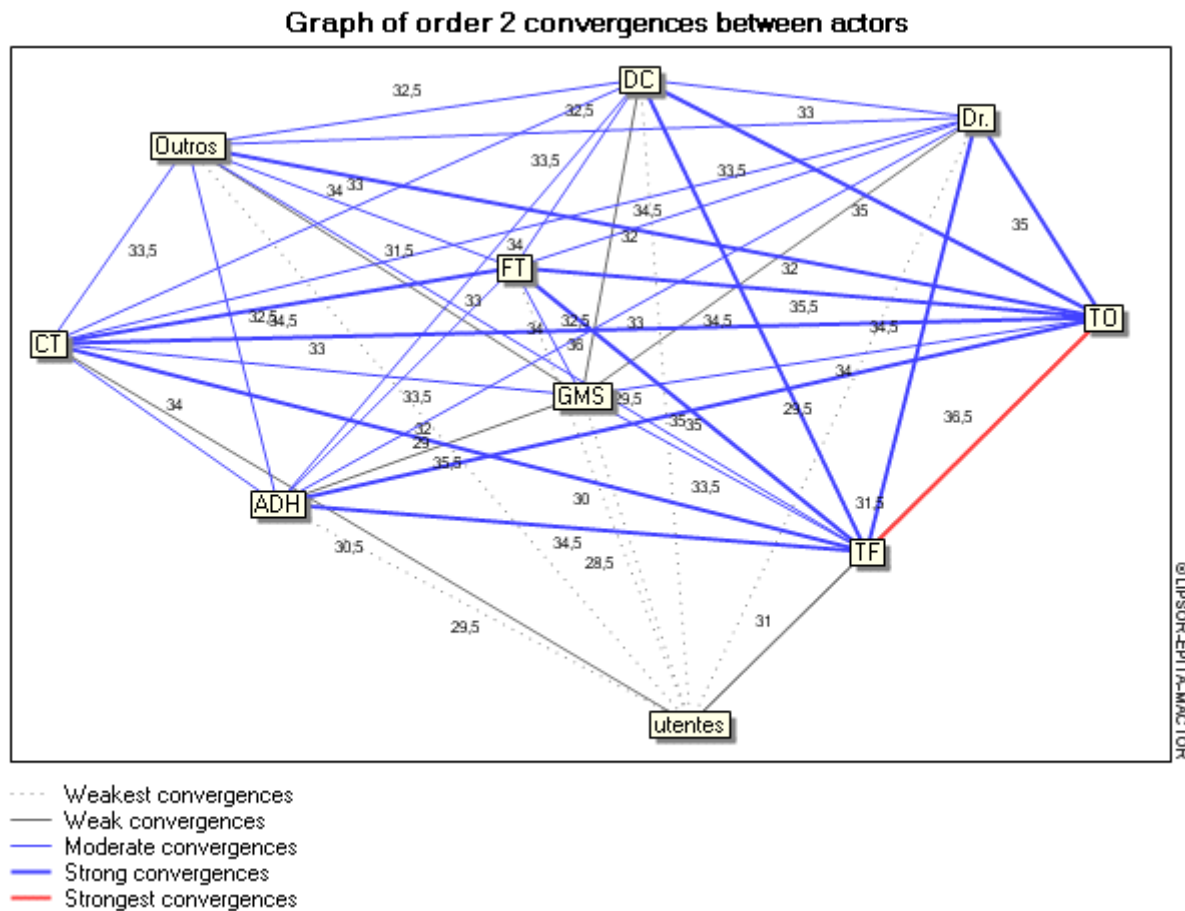
The map of convergences between actors maps the actors with respect to their convergences (data in matrices 1CAA, 2CAA, 3CAA). That is, the closer actors are to each other, the more their convergence is intense. This map is used to create a graph of actors' convergences.

Map of order 2 convergences between actors



c) Graph of order 2 convergences between actors

The graph of convergences between actors maps the actors with respect to their convergences (data in matrices 1CAA, 2CAA, 3CAA). That is, the closer actors are to each other, the more their convergence is intense.



3. Order 3 convergence

a) **Weighted valued convergence matrix (3CAA)**

The weighted valued matrix of convergences or weighted valued Convergences Actors X Actors (3CAA) is related to the weighted valued position matrix Actors X Objectives (3MAO). It identifies for a couple of actors the number of common positions they have on objectives (pro or against). This would identify the number of possible alliances also taking into account the actors' preferences in terms of objectives and their competitiveness. This is a symmetrical matrix.

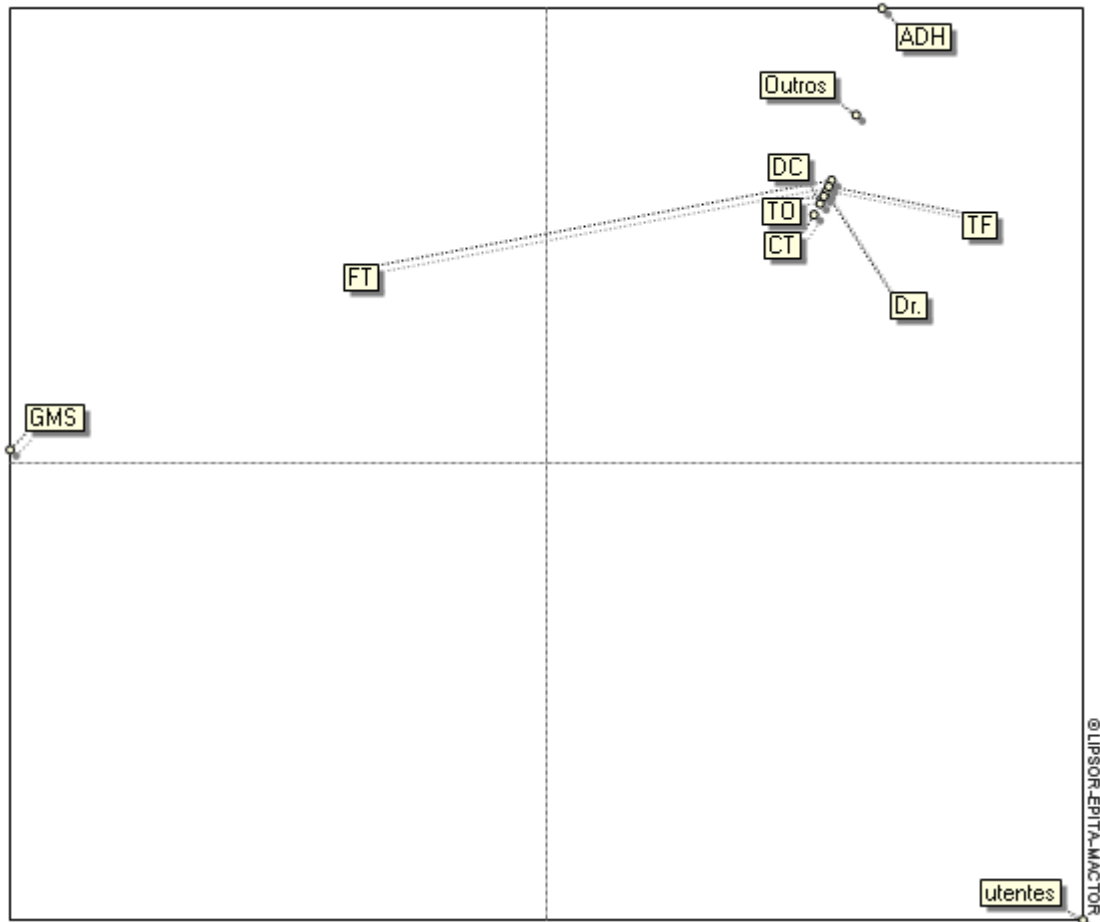
3CAA	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes
GMS	0,0	25,9	29,7	30,6	29,0	28,5	29,3	28,8	26,9	23,6
ADH	25,9	0,0	33,9	34,8	33,3	32,7	33,5	33,0	31,1	27,8
DC	29,7	33,9	0,0	38,6	37,1	36,5	37,3	36,8	34,9	31,6
CT	30,6	34,8	38,6	0,0	37,9	37,4	38,1	37,6	35,8	32,5
Dr.	29,0	33,3	37,1	37,9	0,0	35,9	36,6	36,1	34,3	31,0
FT	28,5	32,7	36,5	37,4	35,9	0,0	36,1	35,6	33,7	30,4
TO	29,3	33,5	37,3	38,1	36,6	36,1	0,0	36,3	34,5	31,2
TF	28,8	33,0	36,8	37,6	36,1	35,6	36,3	0,0	34,0	30,7
Outros	26,9	31,1	34,9	35,8	34,3	33,7	34,5	34,0	0,0	28,8
utentes	23,6	27,8	31,6	32,5	31,0	30,4	31,2	30,7	28,8	0,0
Number of convergences	252,2	285,8	316,4	323,2	311,2	306,8	312,9	308,9	293,8	267,6
Degree of convergence (%)	0,0									

The values represent the degree of convergence: the higher the intensity, the more actors have common interests

b) Map of order 3 convergences between actors

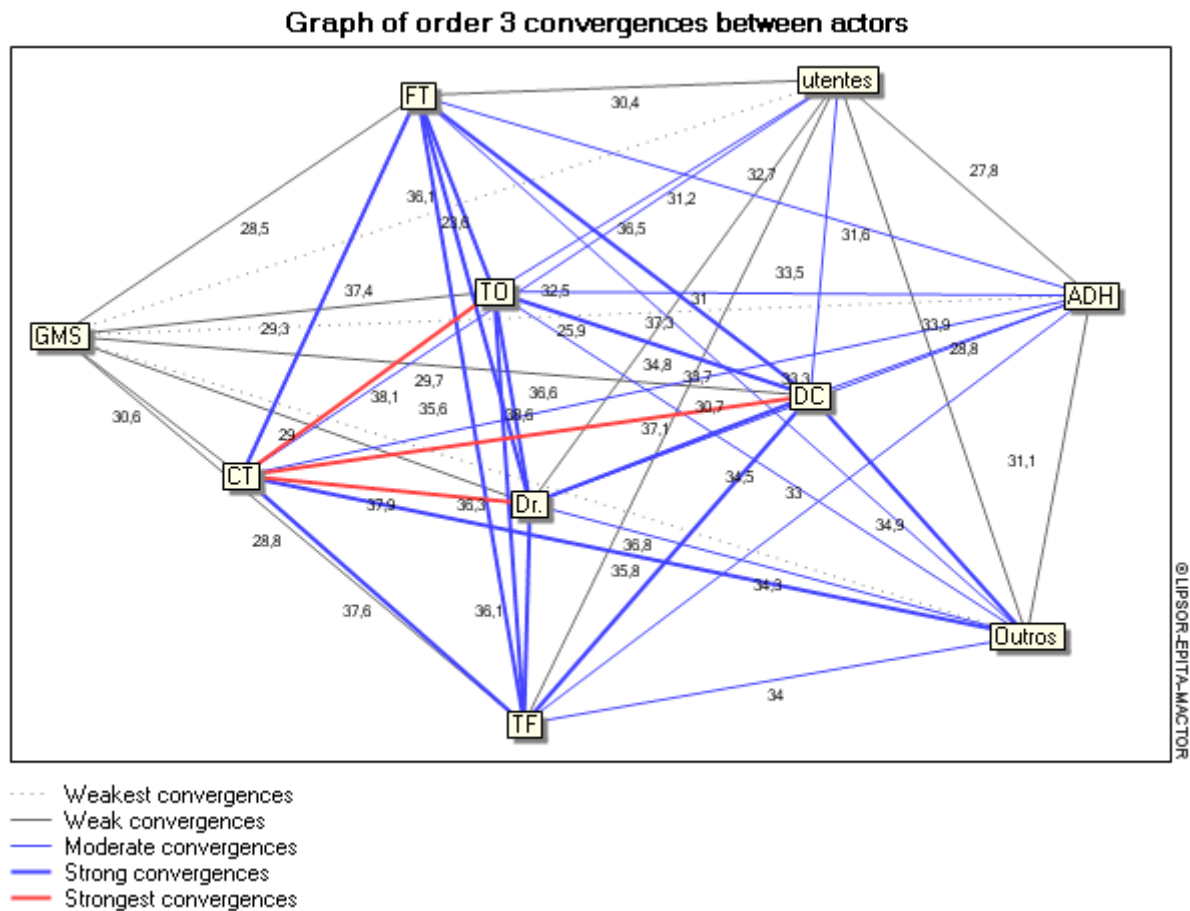
The map of convergences between actors maps the actors with respect to their convergences (data in matrices 1CAA, 2CAA, 3CAA). That is, the closer actors are to each other, the more their convergence is intense. This map is used to create a graph of actors' convergences.

Map of order 3 convergences between actors



c) Graph of order 3 convergences between actors

The graph of convergences between actors maps the actors with respect to their convergences (data in matrices 1CAA, 2CAA, 3CAA). That is, the closer actors are to each other, the more their convergence is intense.



4. DIVERGENCE BETWEEN ACTORS

1. Order 1 divergence

a) Divergence matrix (1DAA)

The Matrix of divergences of objectives between actor or simple Divergences Actors X Actors (1DAA) identifies for each couple of actors the number of objectives on which these actors do not hold the same position (one actor is pre the objective and the other is against it). In other words it describes the number of potential conflicts. "Neutral" and "indifferent" positions (with code "0") are not taken into consideration. This is a symmetrical matrix.

1DAA	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes
GMS	0	0	0	0	0	0	0	0	0	0
ADH	0	0	0	0	0	0	0	0	0	0
DC	0	0	0	0	0	0	0	0	0	0
CT	0	0	0	0	0	0	0	0	0	0
Dr.	0	0	0	0	0	0	0	0	0	0
FT	0	0	0	0	0	0	0	0	0	0
TO	0	0	0	0	0	0	0	0	0	0
TF	0	0	0	0	0	0	0	0	0	0
Outros	0	0	0	0	0	0	0	0	0	0
utentes	0	0	0	0	0	0	0	0	0	0
Number of divergences	0	0	0	0	0	0	0	0	0	0

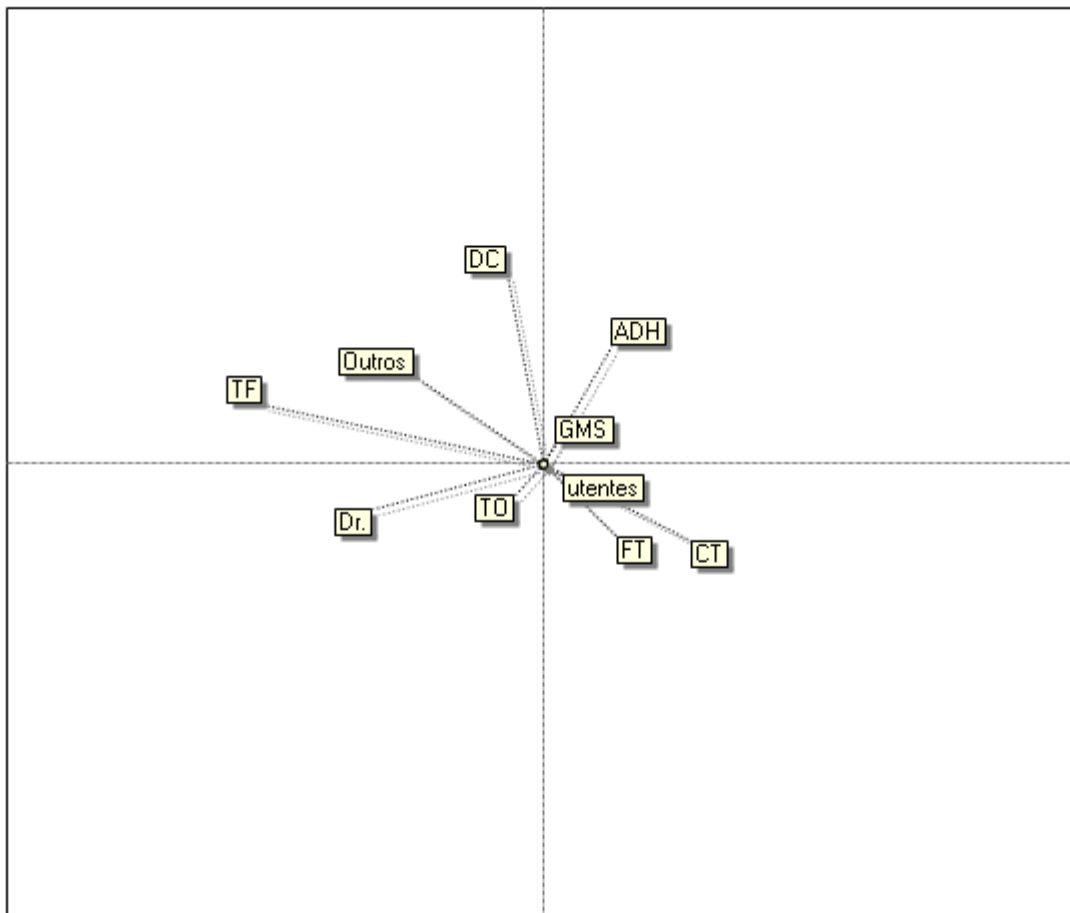
©LIPSOR-EPITA-MACTOR

The values represent the degree of divergence: the higher the intensity, the more actors have diverging interests

b) Map of order 1 divergences between actors

This maps the actors' positions according to their valued divergences (data found in Matrix 2DAA). That is, the further apart actors are to each other, the more their divergence is intense.

Map of order 1 divergences between actors



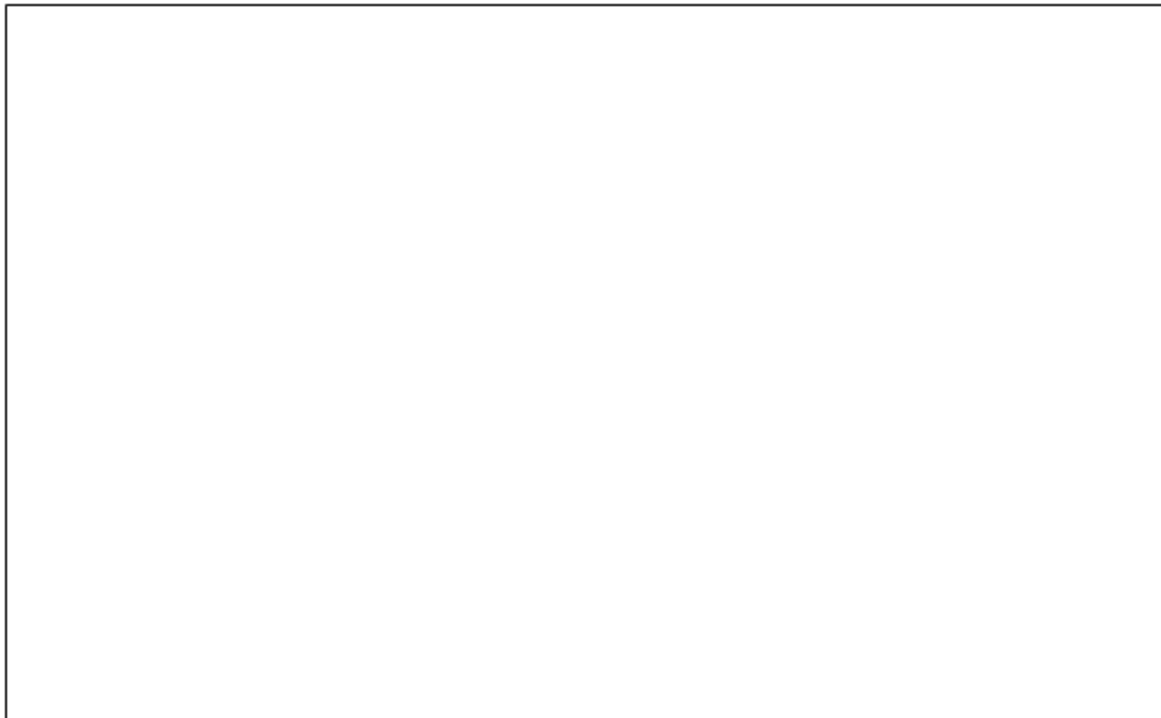
©LIPSOR-EPITA-MACTOR

c) Graph of order 1 divergences between actors

The graph of divergences between actors, maps the actors of order 2 with respect to their divergences (data in matrices 1DAA). It helps to identify potential alliances and conflicts.



Graph of order 1 divergences between actors



© LIPSOR-EPITA-MACTOR

- Weakest divergences
- Weak divergences
- Moderate divergences
- Strong divergences
- Strongest divergences

2. Order 2 divergence

a) Valued divergence matrix (2DAA)

The Matrix of valued divergences or valued Divergences Actors X Actors (2DAA) is related to the Matrix of valued positions Actors X Objectives (2MAO). It identifies for each couple of actors the number of objectives for which these actors do not hold the same position (one actor is pro the objective and the other is against it). The values in this matrix do not measure the number of potential conflicts (as in 1DAA), but rather the conflict intensity with the objectives hierarchy (preferences) of the couple of actors. This is a symmetrical matrix.

2DAA	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes
GMS	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ADH	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DC	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Dr.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
FT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
TO	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
TF	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Outros	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
utentes	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Number of divergences	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Degree of divergence (%)	0,0									

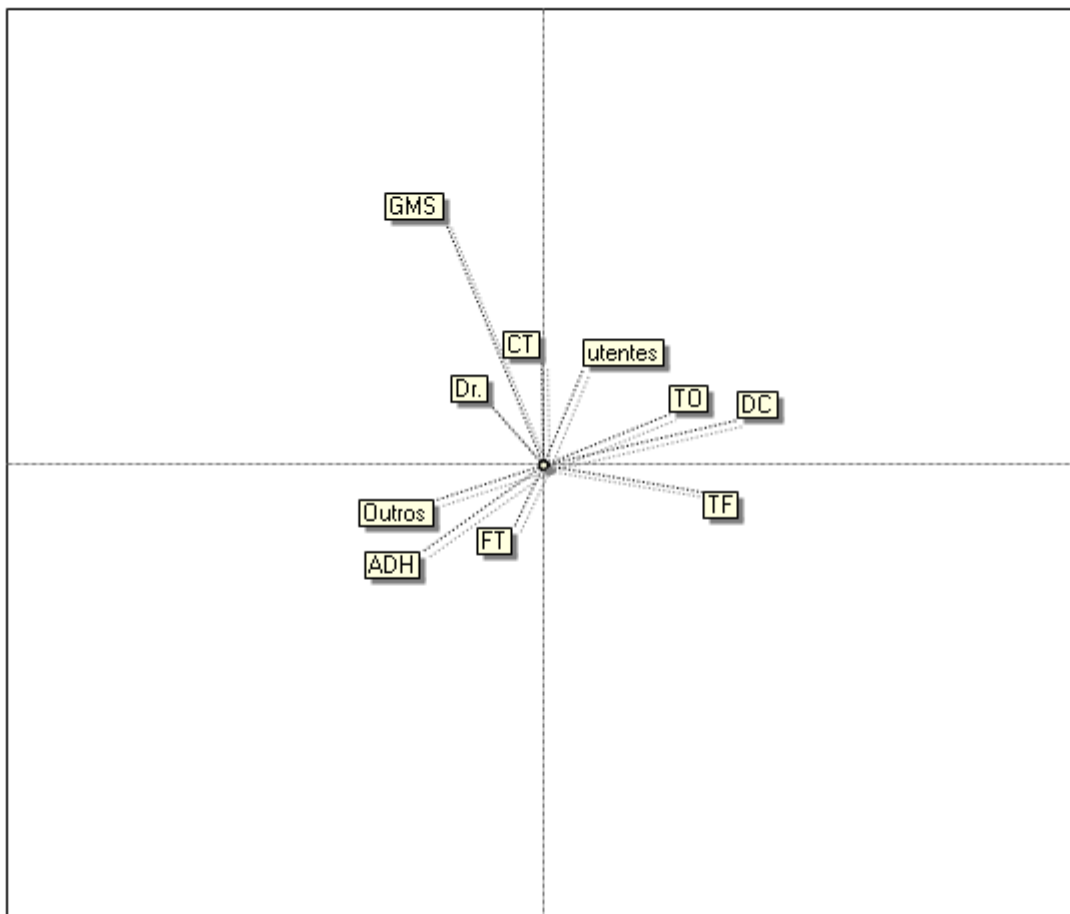
© LIPSOR-EPITA-MACTOR

The values represent the degree of divergence: the higher the intensity, the more actors have diverging interests

b) Map of order 2 divergences between actors

This maps the actors' positions according to their valued divergences (data found in Matrix 2DAA). That is, the further apart actors are to each other, the more their divergence is intense.

Map of order 2 divergences between actors



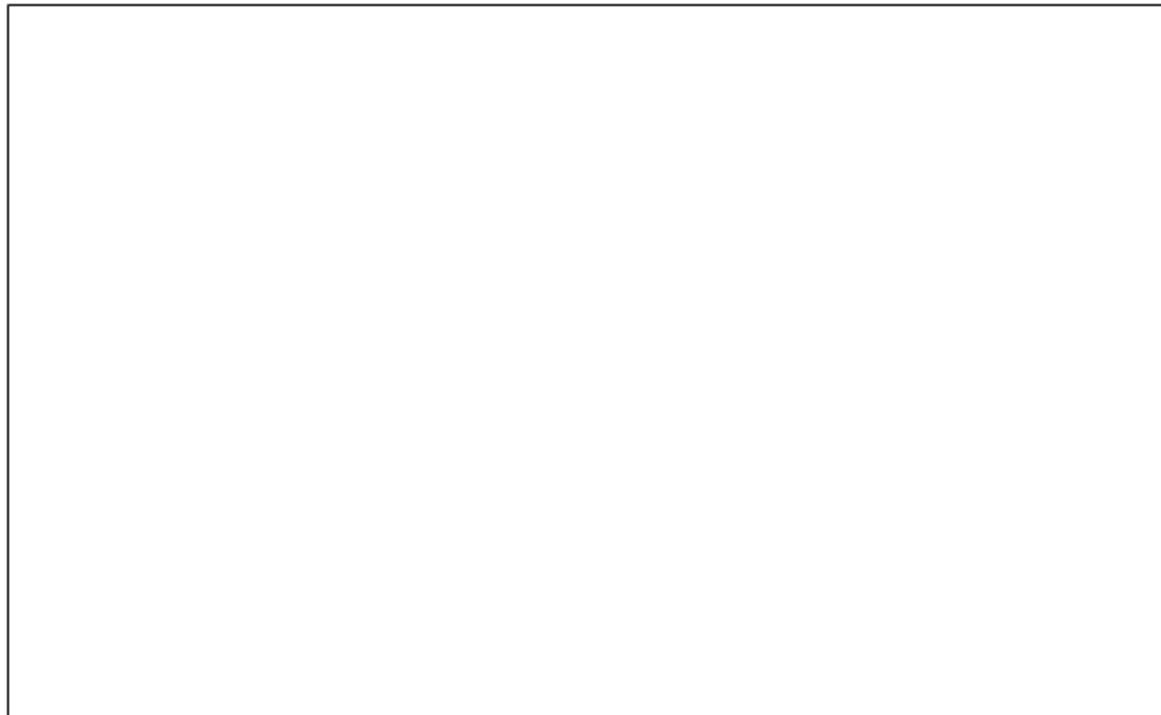
© LIPSOR-EPITA-MACTOR



c) Graph of order 2 divergences between actors

The graph of divergences between actors, maps the actors of order 2 with respect to their divergences (data in matrices 2DAA). It helps to identify potential alliances and conflicts.

Graph of order 2 divergences between actors



© LIPSOR-EPITA-MACTOR

- Weakest divergences
- Weak divergences
- Moderate divergences
- Strong divergences
- Strongest divergences

3. Order 3 Divergence

a) Weighted valued divergence matrix (3DAA)

The weighted valued matrix of divergences or weighted valued Divergences Actors X Actors (3DAA) is related to the weighted valued position matrix Actors X Objectives (3MAO). It identifies for each couple the average divergence intensity for those two actors who do not hold the same position (one actor is pro the objective and the other is against it). The values of this Matrix measure the conflict intensity with, for every couple, their objectives hierarchies (preferences) and their competitiveness. This is a symmetrical matrix.

3DAA	GMS	ADH	DC	CT	Dr.	FT	TO	TF	Outros	utentes
GMS	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ADH	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DC	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Dr.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
FT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
TO	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
TF	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Outros	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
utentes	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Number of divergences	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Degree of divergence (%)	0,0									

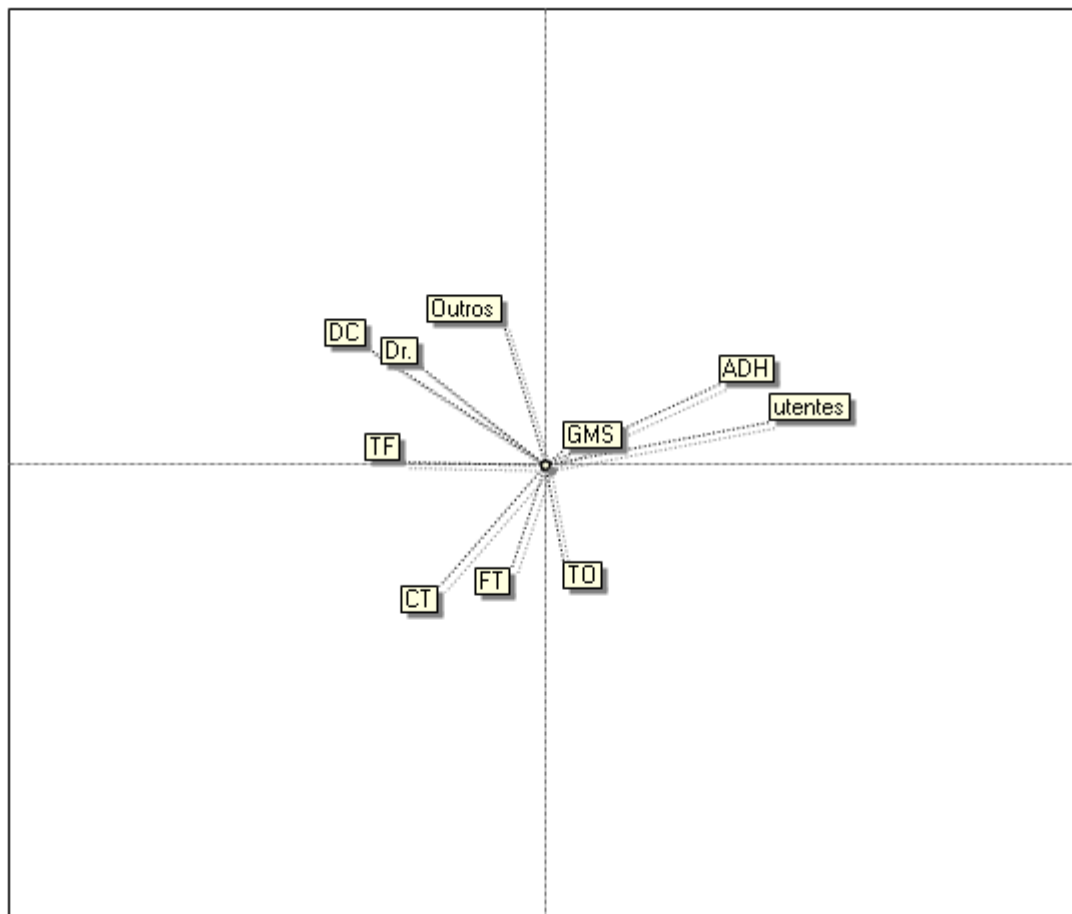
© LIPSOR-EPITA-MACTOR

The values represent the degree of divergence: the higher the intensity, the more actors have diverging interests

b) Map of order 3 divergences between actors

This maps the actors' positions according to their valued divergences (data found in Matrix 3DAA). That is, the further apart actors are to each other, the more their divergence is intense.

Map of order 3 divergences between actors



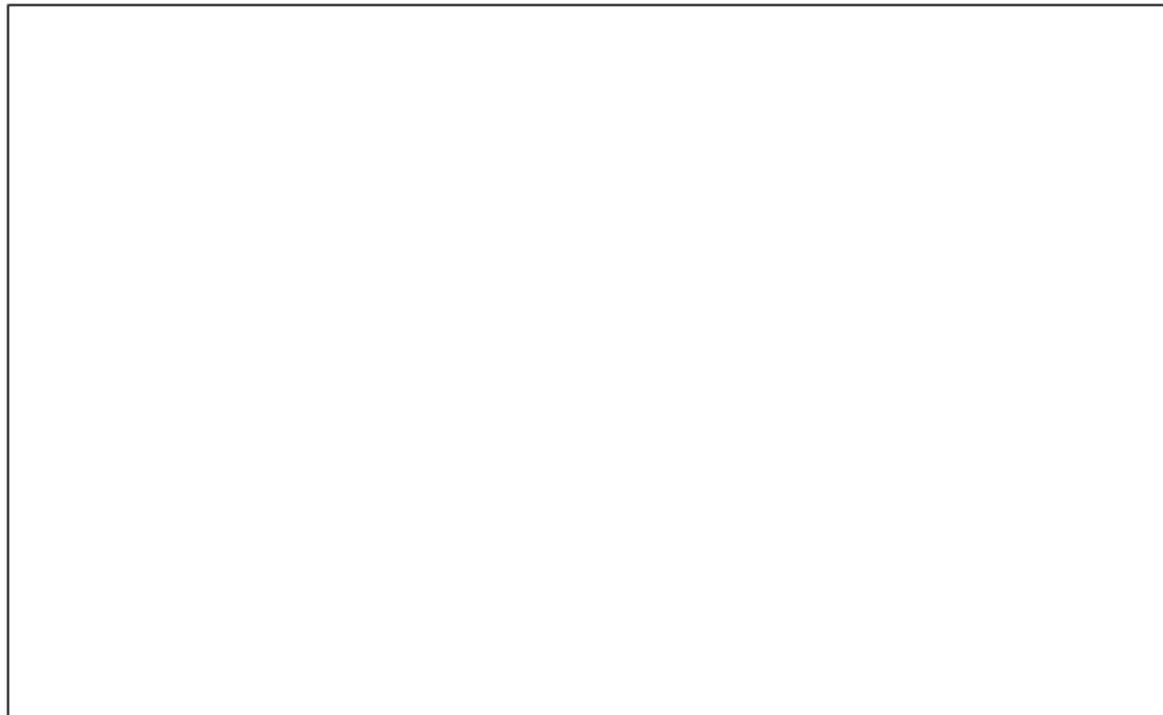
© LIPSOR-EPITA-MACTOR



c) Graph of order 3 divergences between actors

The graph of divergences between actors, maps the actors of order 3 with respect to their divergences (data in matrices 3DAA). It helps to identify potential alliances and conflicts.

Graph of order 3 divergences between actors



© LIPSOR-EPITA-MACTOR

- Weakest divergences
- Weak divergences
- Moderate divergences
- Strong divergences
- Strongest divergences

5. ACTOR AMBIVALENCE

1. Actor's ambivalence matrix

Two actors can share both converging and diverging positions on different objectives. Hence, we call this couple of actors ambivalent. If they wish to become allies, they have to work only on those common objectives, and put aside their diverging objectives. Actor ambivalence is calculated with three equilibrium indicators using their simple, valued, then valued and weighted positions.

	Eq[1]	Eq[2]	Eq[3]
GMS	0,0	0,0	0,0
ADH	0,0	0,0	0,0
DC	0,0	0,0	0,0
CT	0,0	0,0	0,0
Dr.	0,0	0,0	0,0
FT	0,0	0,0	0,0
TO	0,0	0,0	0,0
TF	0,0	0,0	0,0
Outros	0,0	0,0	0,0
utentes	0,0	0,0	0,0

© LIPSOR-EPITA-MACTOR



This indicator varies from 1 (very ambivalent actors) to 0 (not ambivalent actors).

2. Histogram of actor's ambivalence

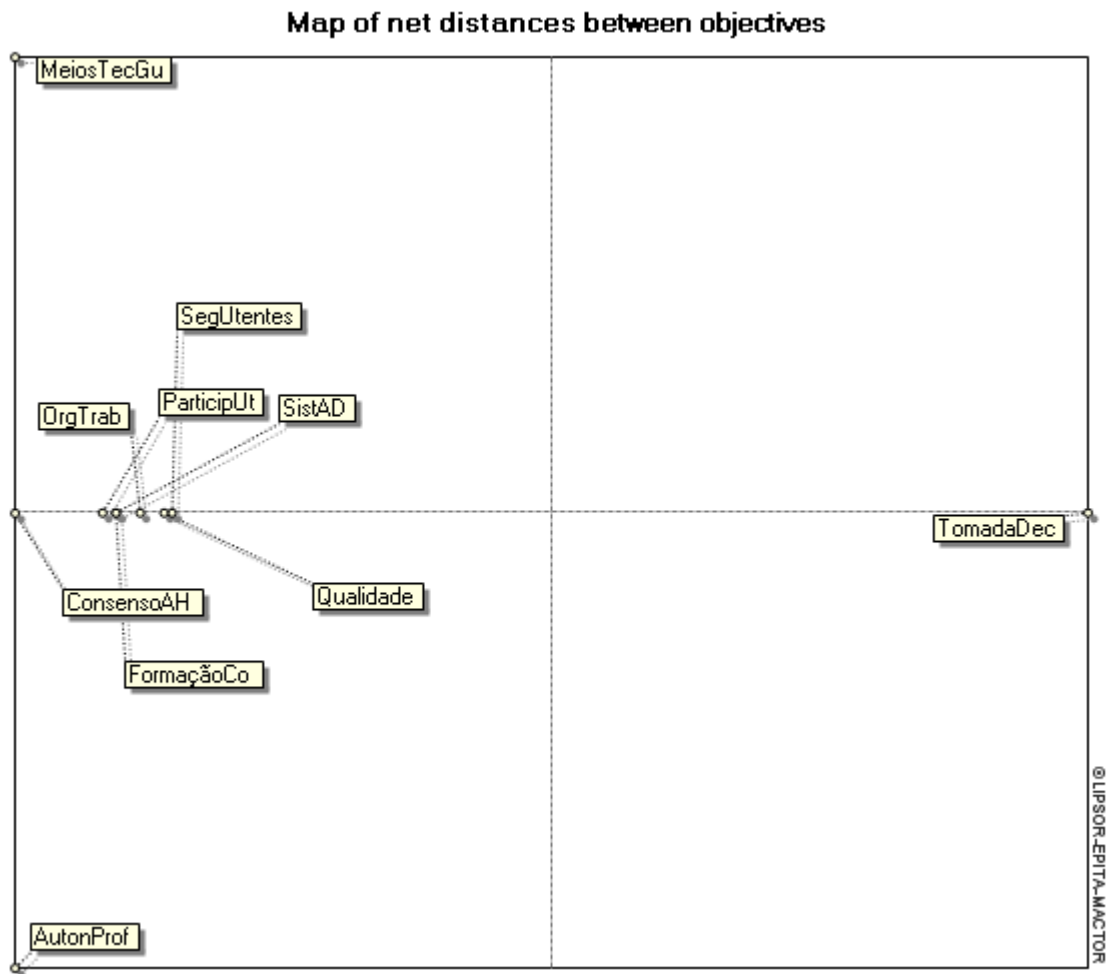
This histogram is produced from the actor ambivalence vector.



6. NET DISTANCE BETWEEN OBJECTIVES

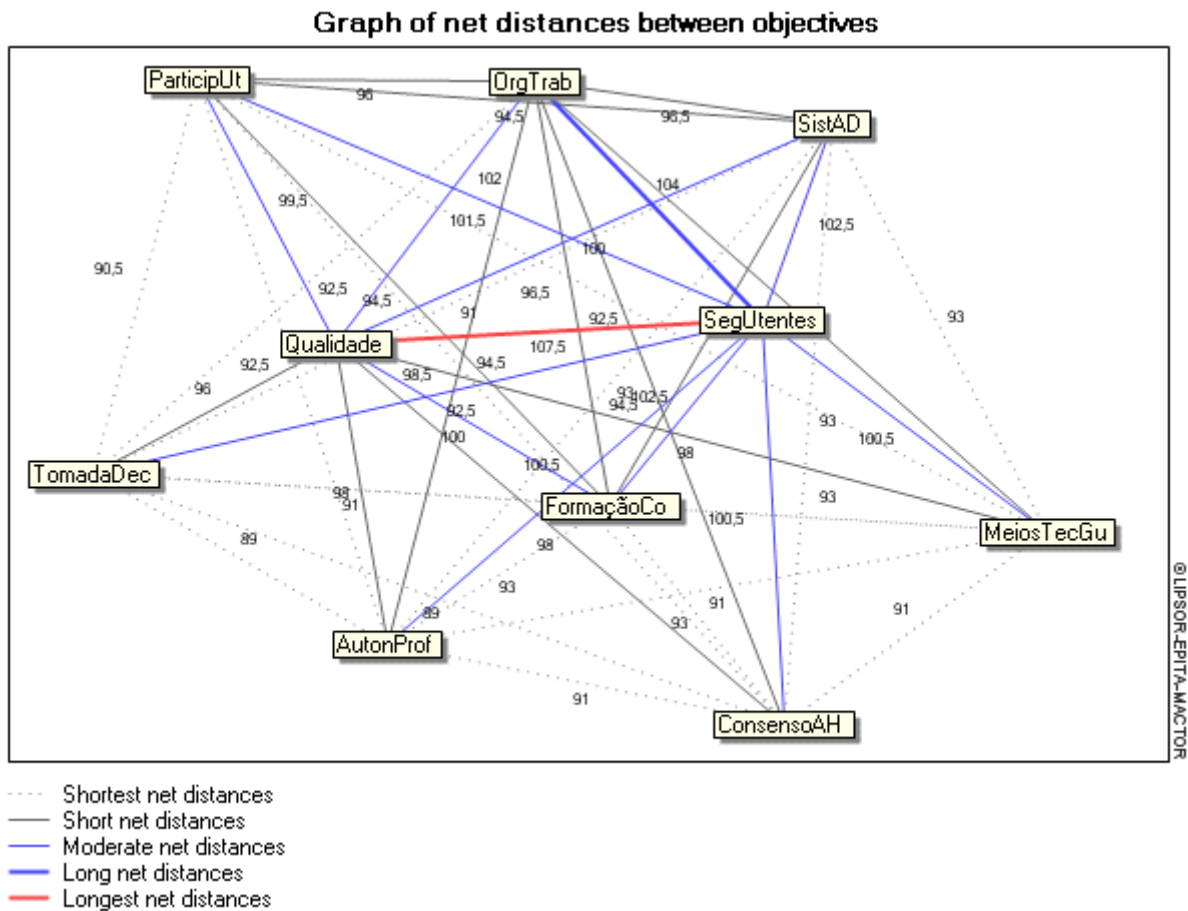
1. Map of net distances between objectives

This map is used to identify objectives on which actors take the same position (either pro or against). It hence enables to isolate groups of objectives where there is a strong convergence (when objectives are close together) or divergence (when objectives are far apart) on the part of actors' opinion. It also maps objectives with respect to the net scale (the difference between the valued convergence matrix and the valued divergence matrix, respectively 2COO and 2DOO).



2. Graph of net distances between objectives

This graph is used to identify objectives on which actors take the same position (either pro or against). The stronger the link between objectives, the higher the convergence of actors' opinions on these objectives.

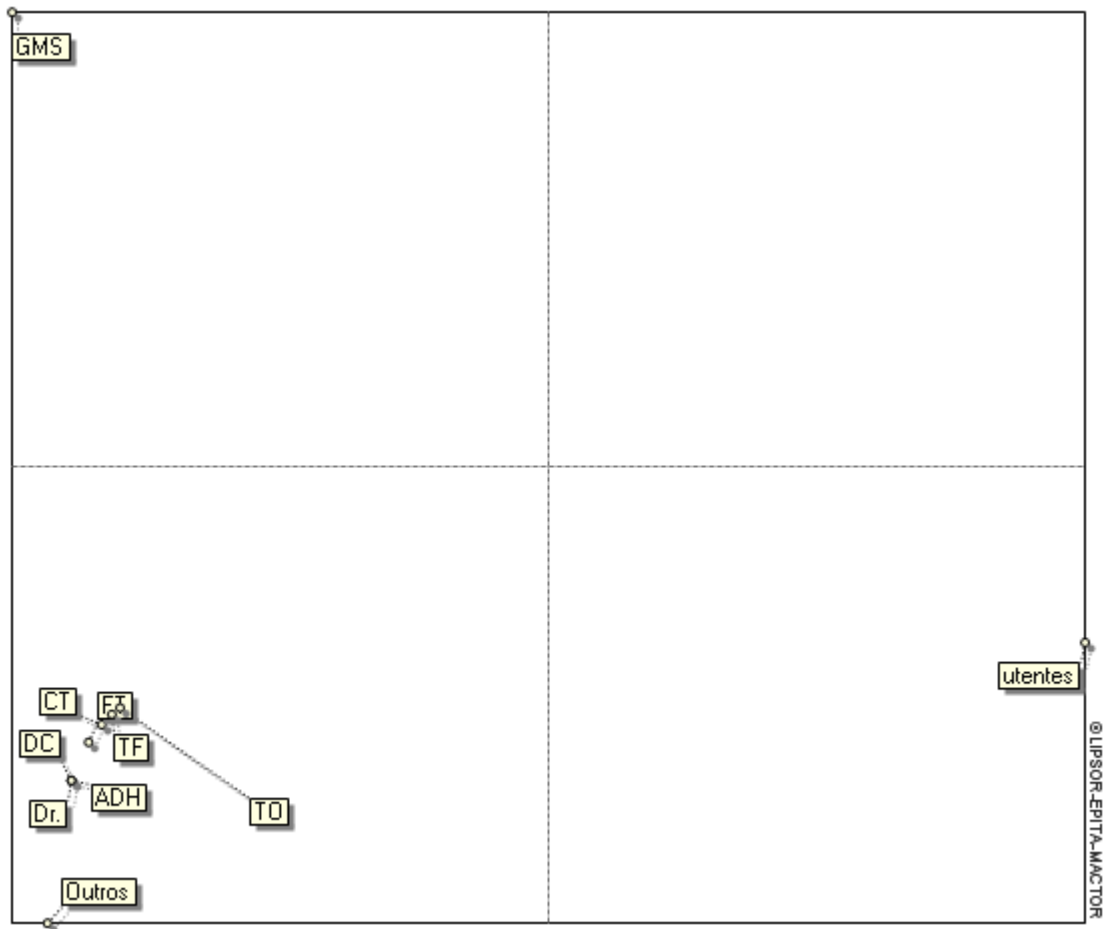


7. NET DISTANCES BETWEEN ACTORS

1. Map of net distances between actors

The map of net distances between actors is used to recognise potential alliances while taking into account divergences and convergences between actors of order 2.

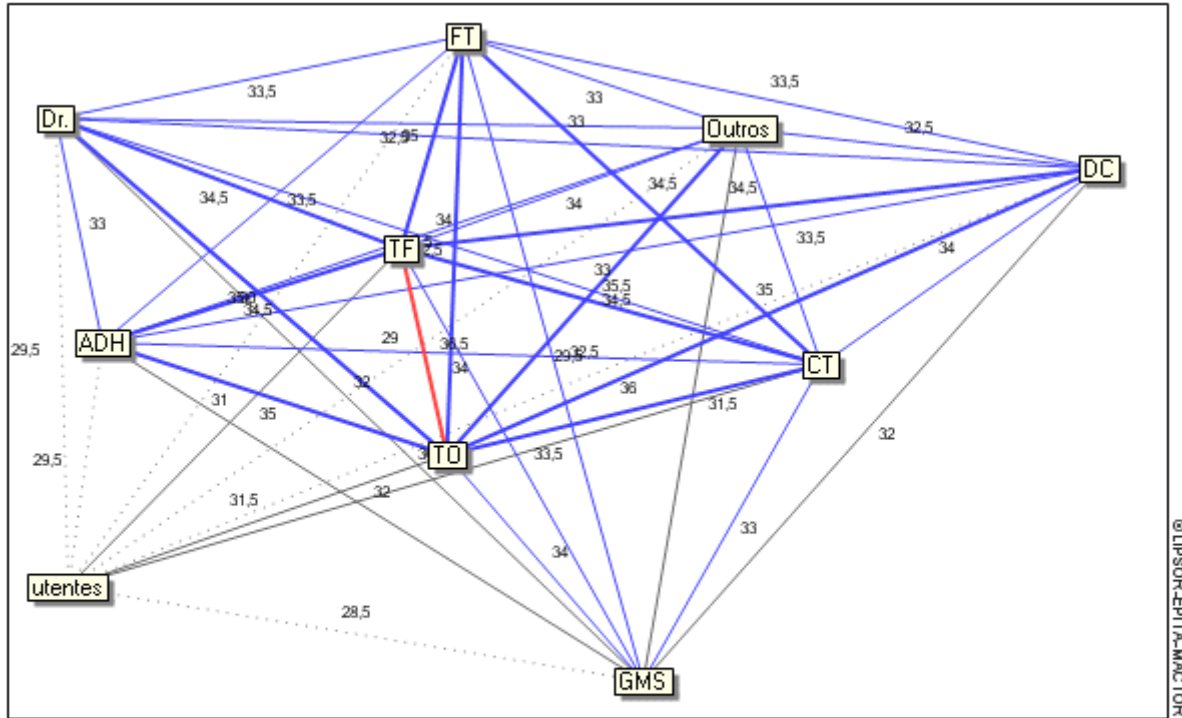
Map of net distances between actors



2. Graph of net distances between actors

The graph of net distances between actors is used to recognise potential alliances while taking into account divergences and convergences between actors of order 2.

Graph of net distances between actors



© LIPSOR-EPITA-MACTOR

- Shortest net distances
- Short net distances
- Moderate net distances
- Long net distances
- Longest net distances

