

PRO 3475 – Gestão de Projetos

Aula Laboratório: **Super Decisions**



O quão racional você é ao decidir?

Versão 3.2 do Super Decisions

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The **Super Decisions** is decision support software that implements the **AHP** and **ANP**.

The **Analytic Hierarchical Process (AHP)** and the **Analytic Network Process (ANP)** make it possible to include **intangibles** in decision making.

AHP/ANP are the most powerful synthesis methodologies for combining judgment and data to effectively rank options and predict outcomes.

Super Decisions

SuperDecisions is decision making software based on the Analytic Hierarchy Process (AHP) and the Analytic Network Process (ANP). Decision making is all about setting priorities and the AHP and ANP, award-winning decision processes are the way to do that.

AHP/ANP Vision Sponsors

MM

MaestroMeetings Inc is a nonprofit organization dedicated to promoting academic and social change collaborations by supporting its partners to plan, organize, and manage high-quality

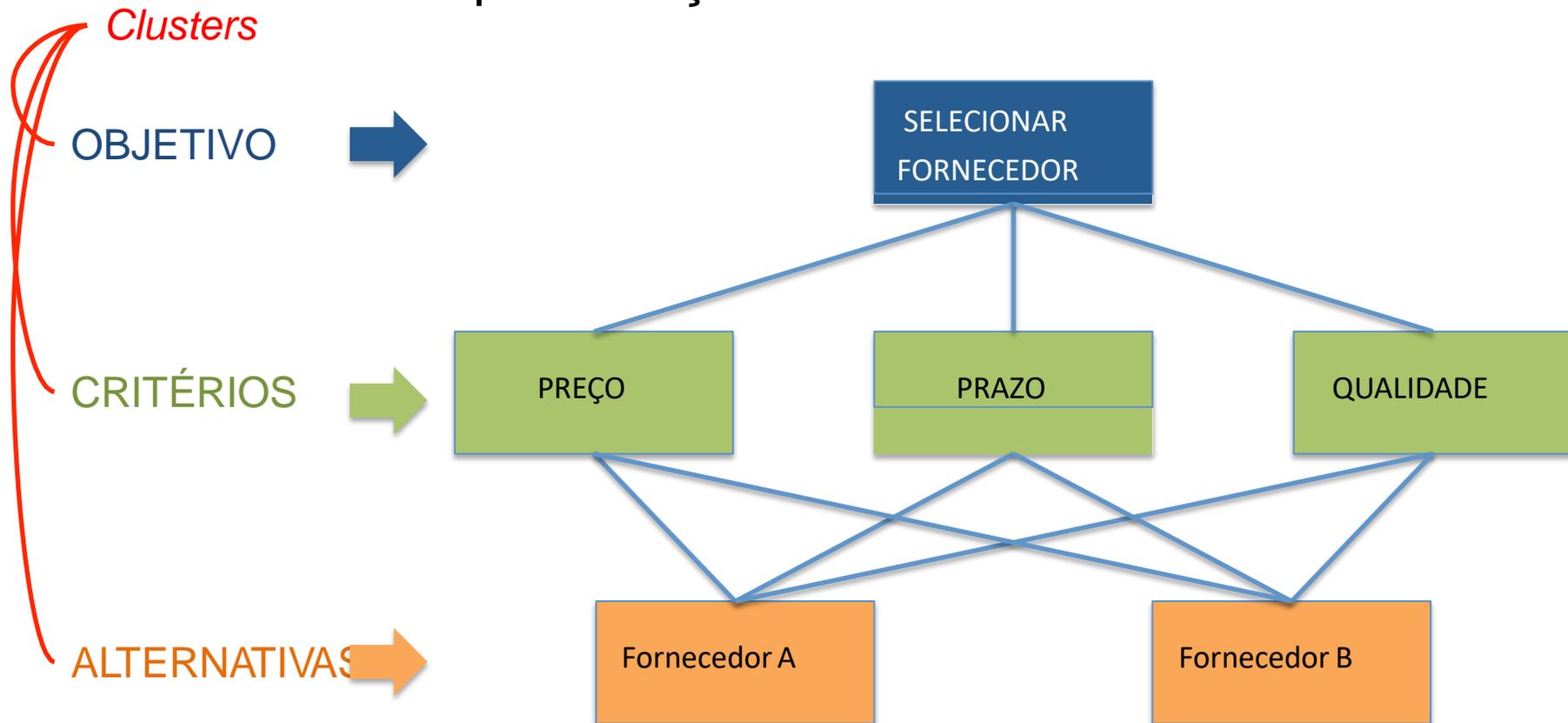
Passos do Analytic Hierarchy Process (AHP)

1. Definir o objetivo;
2. Estruturar os elementos em critérios, subcritérios, alternativas, etc.;
3. Comparar os elementos, de 2 em 2;
4. Calcular os pesos e verificar a taxa de consistência;
5. Avaliar as alternativas quanto à ponderação; e
6. Formar o ranking.

Vamos fazer isso no Super Decisions...

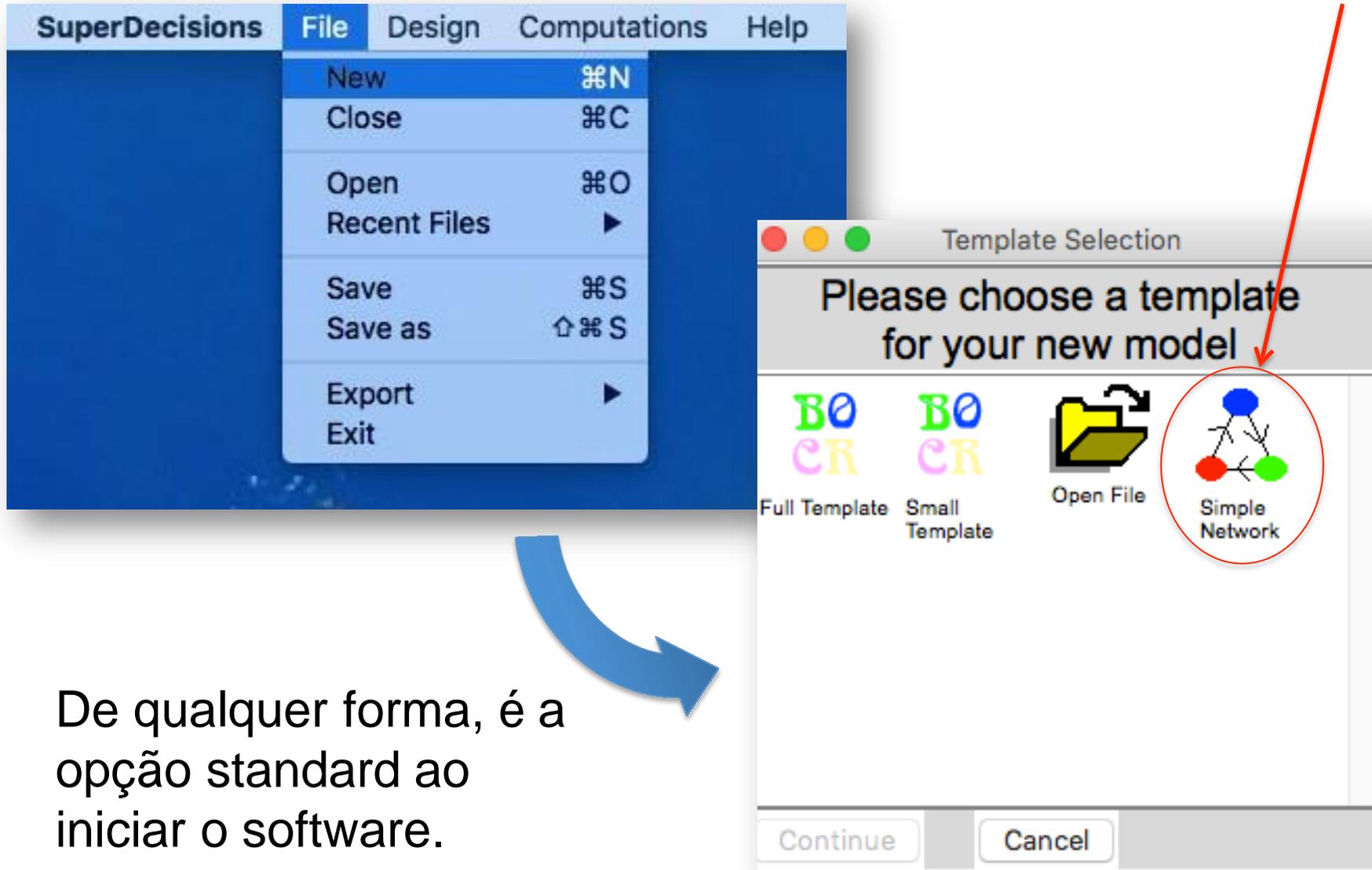
Analytic Hierarchy Process (AHP)

Exemplo: seleção de um fornecedor...



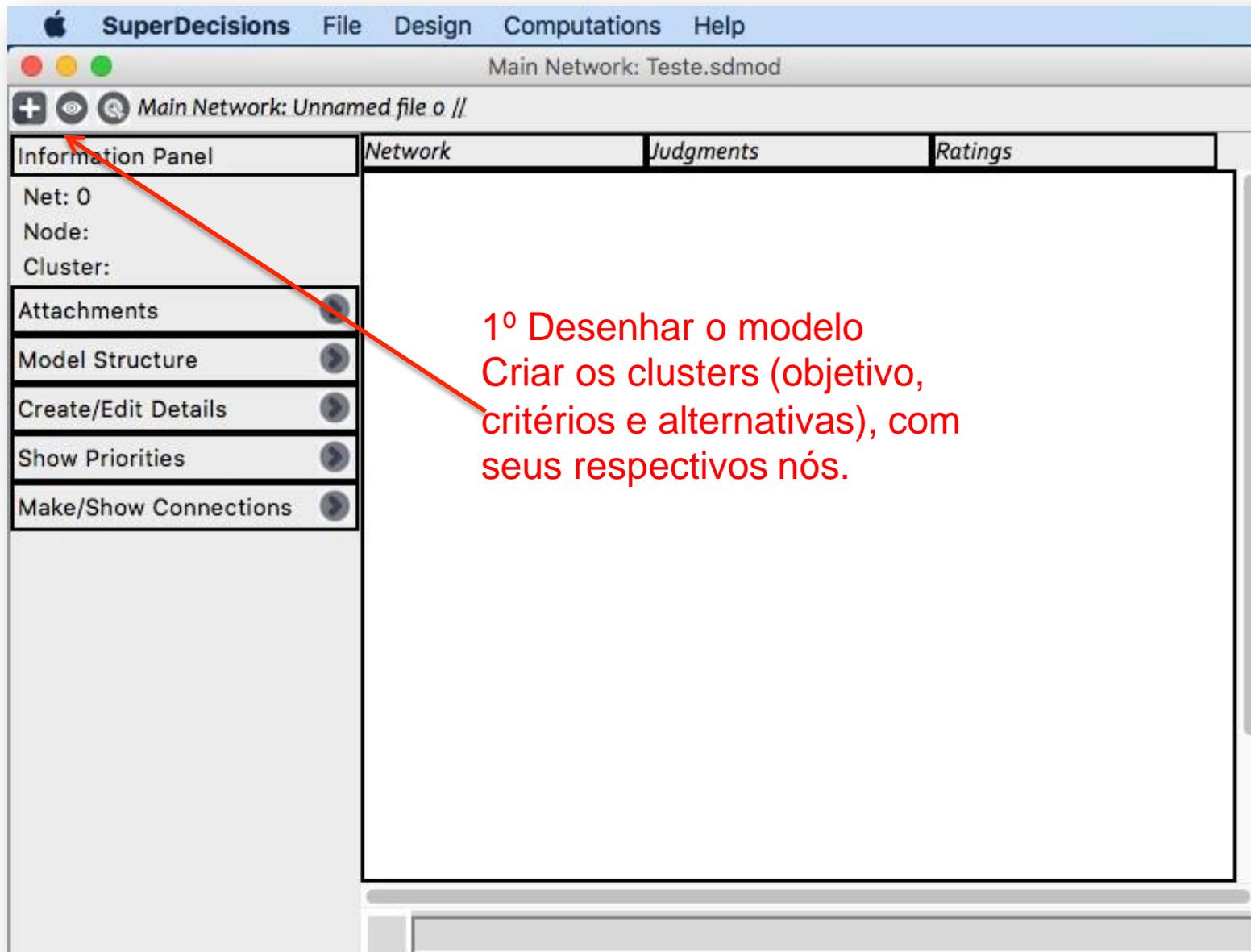
Vamos reproduzir esse modelo no software.

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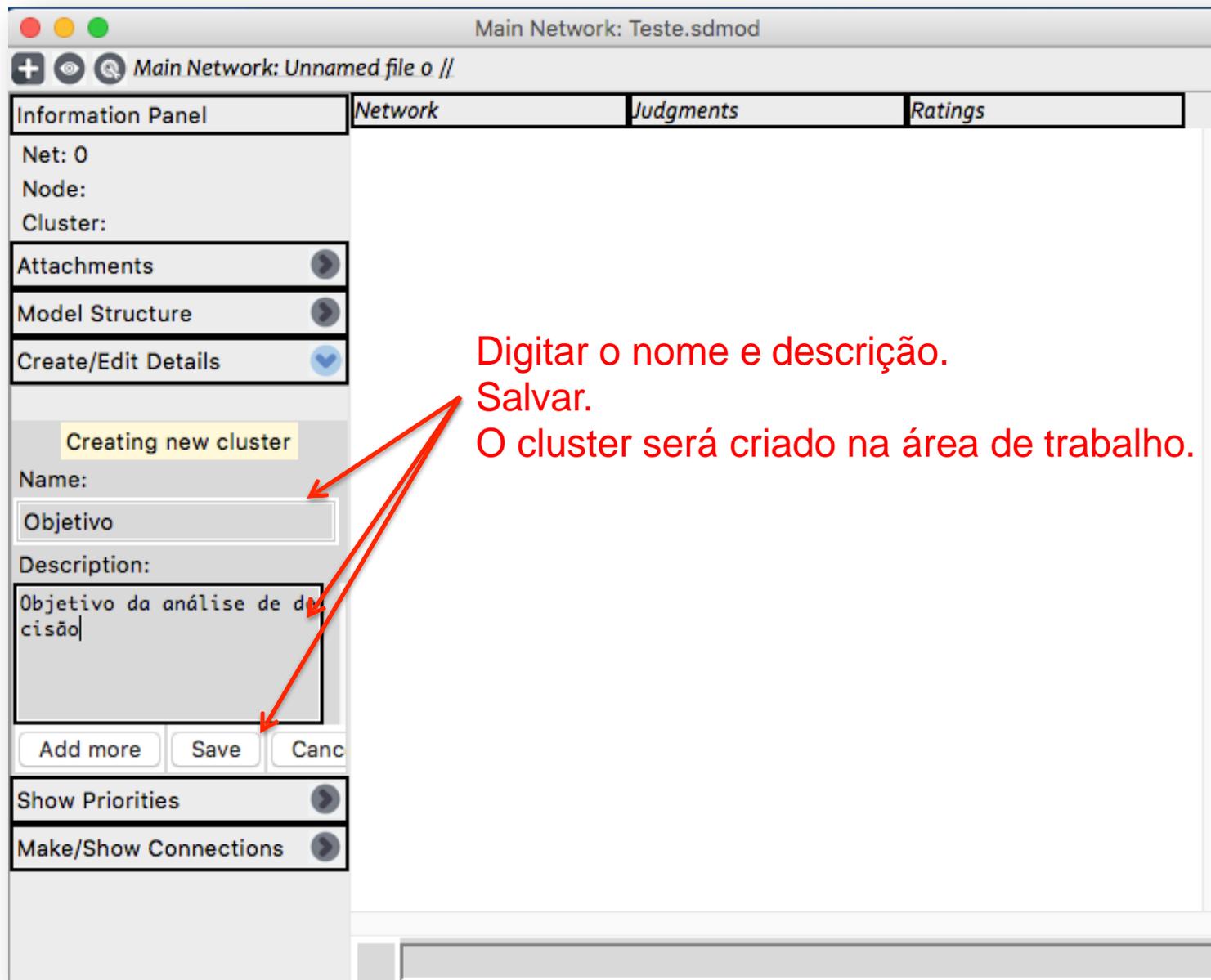


De qualquer forma, é a opção standard ao iniciar o software.

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Information Panel

Network Judgments Ratings

Net: 0
Node:
Cluster:

Attachments
Model Structure
Create/Edit Details

Creating new cluster

Name:
Objetivo

Description:
Objetivo da análise de decisão

Add more Save Cancel

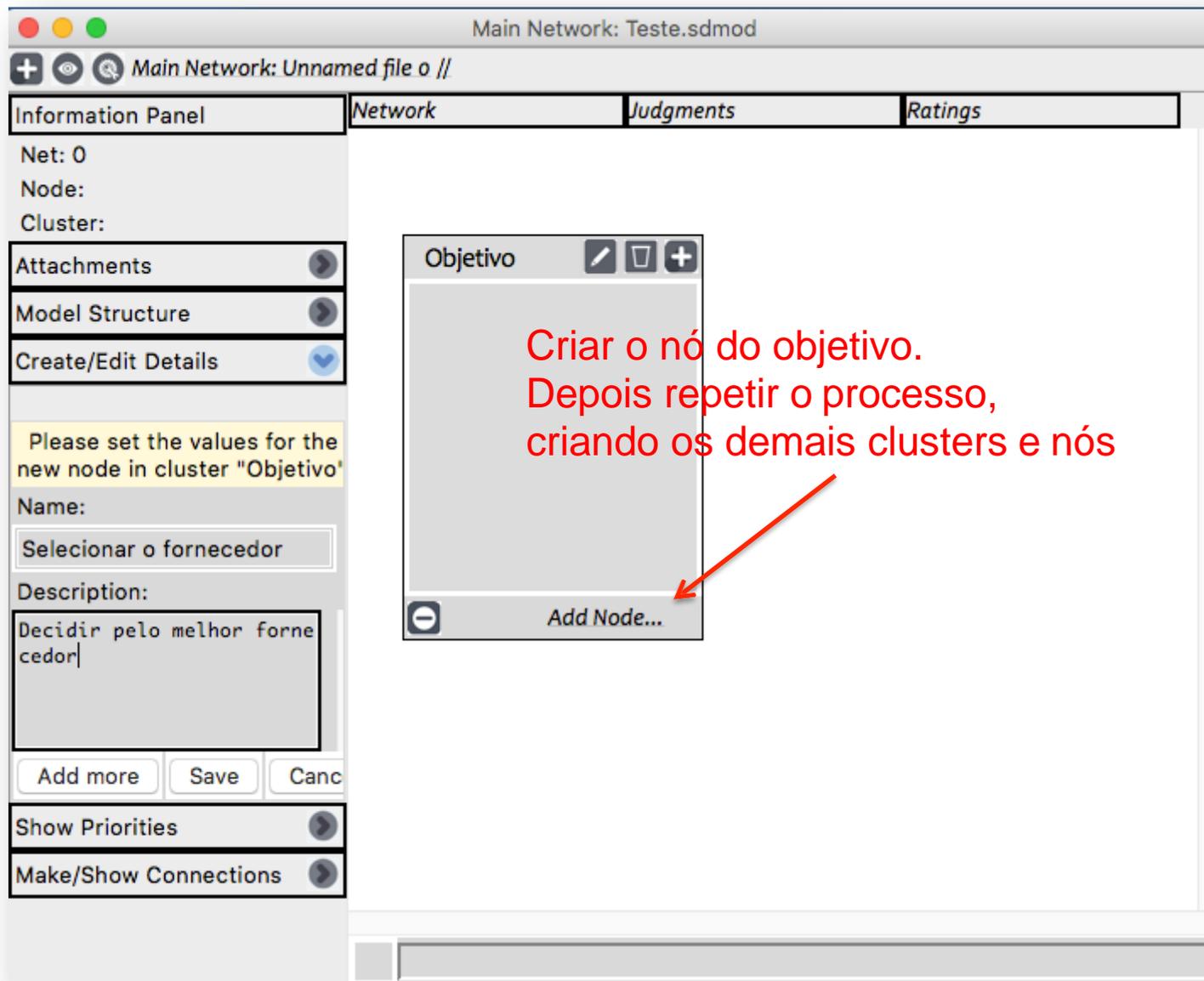
Show Priorities
Make/Show Connections

Main Network: Teste.sdmod

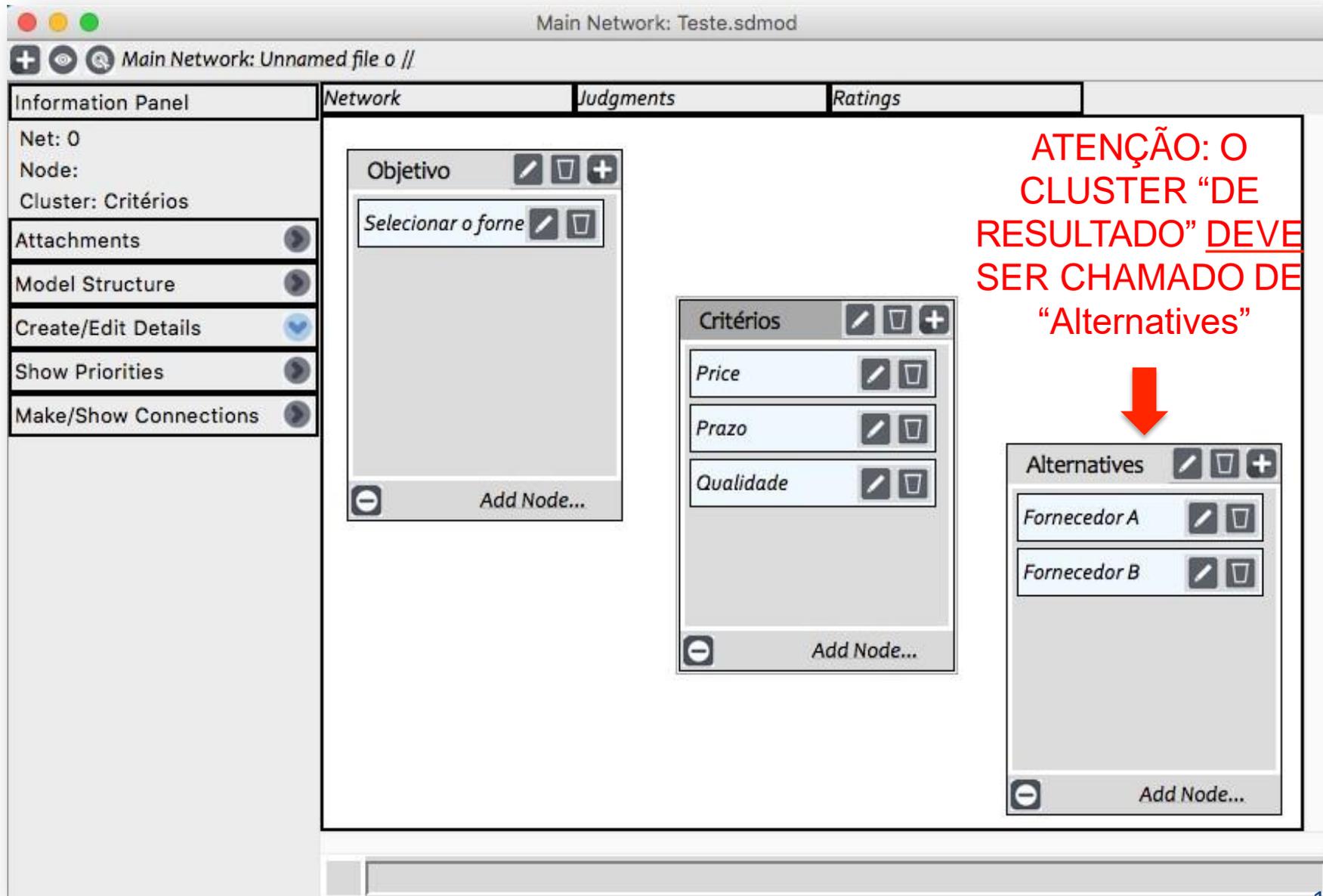
Main Network: Unnamed file 0 //

Digitar o nome e descrição.
Salvar.
O cluster será criado na área de trabalho.

Versão 3.2 do Super Decisions



Versão 3.2 do Super Decisions



The screenshot displays the Super Decisions software interface. The main window is titled "Main Network: Teste.sdmod". The interface is divided into several panels:

- Information Panel:** Located on the left, it shows "Net: 0", "Node:", and "Cluster: Critérios". It also has buttons for "Attachments", "Model Structure", "Create/Edit Details", "Show Priorities", and "Make/Show Connections".
- Network Panel:** The main workspace, currently showing the "Network" tab. It contains three nodes:
 - Objetivo:** A node with the text "Selecionar o forne" (partially visible).
 - Critérios:** A node containing three criteria: "Price", "Prazo", and "Qualidade".
 - Alternatives:** A node containing two alternatives: "Fornecedor A" and "Fornecedor B".

Each node has edit, delete, and add icons. There are "Add Node..." buttons at the bottom of each node's container.

ATENÇÃO: O CLUSTER "DE RESULTADO" DEVE SER CHAMADO DE "Alternatives"

A red arrow points from the text above to the "Alternatives" node.

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PARA CRIAR OS RELACIONAMENTOS ENTRE VARIÁVEIS (NÓS) DO MODELO....



The screenshot shows the 'Main Network: Teste.sdmod' window with the 'Network' tab selected. The 'Information Panel' on the left shows the current node is 'Selecionar o fornecedor' under the 'Objetivo' cluster. The 'Make/Show Connections' panel is active, showing a table of nodes and their connection status.

Nodes	Connecte
Fornecedor A	<input type="checkbox"/>
Fornecedor B	<input type="checkbox"/>
Prazo	<input checked="" type="checkbox"/>
Price	<input checked="" type="checkbox"/>
Qualidade	<input checked="" type="checkbox"/>
Selecionar ...	<input type="checkbox"/>

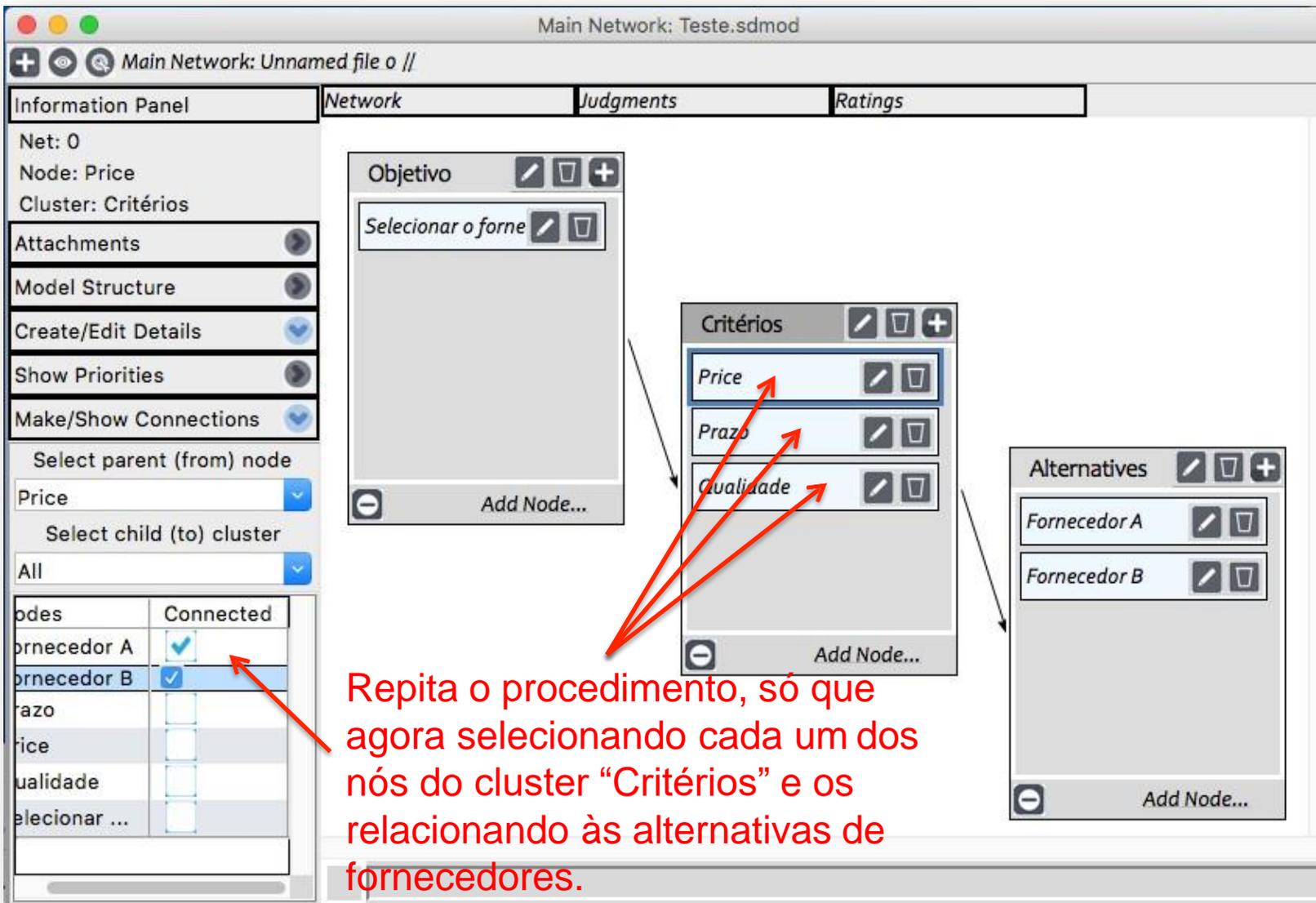
Red arrows point to the 'Selecionar o fornecedor' node in the 'Objetivo' cluster and the 'Qualidade' node in the 'Critérios' cluster. Another red arrow points to the 'Make/Show Connections' panel in the left sidebar.

1- Selecione o nó do cluster objetivo.
2 - Abra o painel "Make/Show Connections"

Selecione os nós do cluster "Critérios"

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PARA CRIAR OS RELACIONAMENTOS ENTRE VARIÁVEIS (NÓS) DO MODELO....



The screenshot shows the 'Main Network: Teste.sdmod' window. The 'Network' tab is active, displaying three clusters: 'Objetivo' (containing 'Selecionar o forne'), 'Critérios' (containing 'Price', 'Prazo', and 'Qualidade'), and 'Alternatives' (containing 'Fornecedor A' and 'Fornecedor B'). The 'Information Panel' on the left shows 'Net: 0', 'Node: Price', and 'Cluster: Critérios'. Below it, there are dropdown menus for 'Select parent (from) node' (set to 'Price') and 'Select child (to) cluster' (set to 'All'). At the bottom left, a table shows the following data:

Nodes	Connected
Fornecedor A	<input checked="" type="checkbox"/>
Fornecedor B	<input checked="" type="checkbox"/>
Prazo	<input type="checkbox"/>
Price	<input type="checkbox"/>
Qualidade	<input type="checkbox"/>
Selecionar ...	<input type="checkbox"/>

Red arrows indicate the process of creating relationships: one arrow points from the 'Price' node in the 'Critérios' cluster to the 'Fornecedor A' node in the 'Alternatives' cluster, and another arrow points from the 'Fornecedor B' node in the 'Alternatives' cluster to the 'Price' node in the 'Critérios' cluster. A third arrow points from the 'Fornecedor B' row in the table to the 'Critérios' cluster.

Repita o procedimento, só que agora selecionando cada um dos nós do cluster "Critérios" e os relacionando às alternativas de fornecedores.

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AGORA VAMOS COMPRAR OS ELEMENTOS AOS PARES.

Main Network: Teste.sdmod

Main Network: Unnamed file o //

Information Panel

Net: 0
Node: Selecionar o fornecedor
Cluster: Objetivo

Attachments

Model Structure

Create/Edit Details

Show Priorities

Make/Show Connections

Select parent (from) node
Selecionar o fornecedor

Select child (to) cluster
All

Nodes	Connecte
Fornecedor A	<input type="checkbox"/>
Fornecedor B	<input type="checkbox"/>
Prazo	<input checked="" type="checkbox"/>
Price	<input checked="" type="checkbox"/>
Qualidade	<input checked="" type="checkbox"/>
Selecionar ...	<input type="checkbox"/>

Network

Judgments

Ratings

Objetivo

Selecionar o fornecedor

Add Node...

Critérios

Price

Prazo

Qualidade

Add Node...

Alternatives

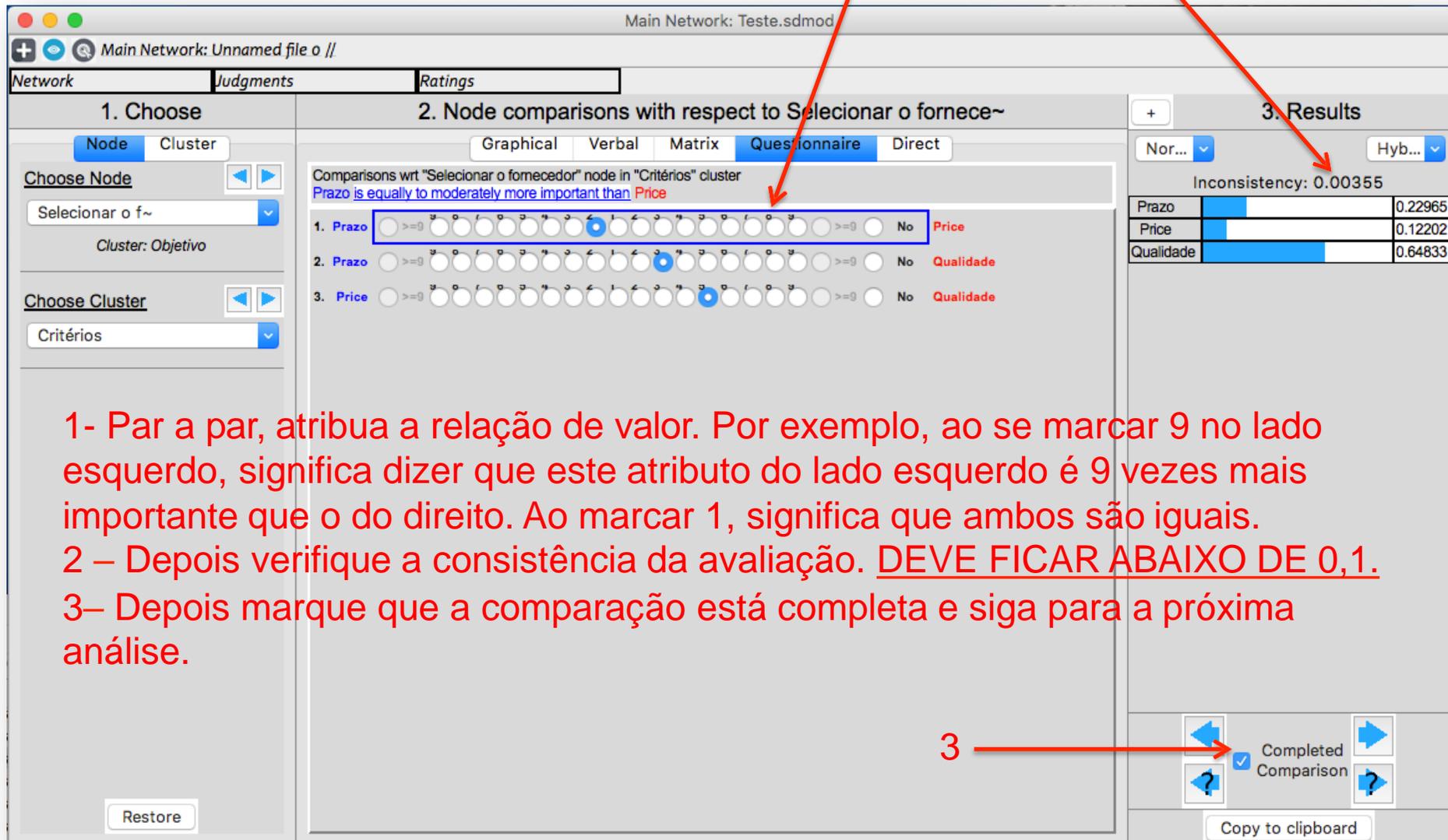
Fornecedor A

Fornecedor B

Add Node...

SELECIONE O NÓ DO OBJETIVO E DEPOIS ACESSE O PAINEL "JUDGEMENTS"

Versão 3.2 do Super Decisions



Main Network: Teste.sdmod

Main Network: Unnamed file o //

Network Judgments Ratings

1. Choose

Node Cluster

Choose Node

Selecionar o f~

Cluster: Objetivo

Choose Cluster

Critérios

2. Node comparisons with respect to Selecionar o fornece~

Graphical Verbal Matrix Questionnaire Direct

Comparisons wrt "Selecionar o fornecedor" node in "Critérios" cluster

Prazo is equally to moderately more important than Price

1. Prazo >=9 1 2 3 4 5 6 7 8 9 >=9 No Price

2. Prazo >=9 1 2 3 4 5 6 7 8 9 >=9 No Qualidade

3. Price >=9 1 2 3 4 5 6 7 8 9 >=9 No Qualidade

3. Results

Nor... Hyb...

Inconsistency: 0.00355

Prazo	0.22965
Price	0.12202
Qualidade	0.64833

Restore

3

Completed Comparison

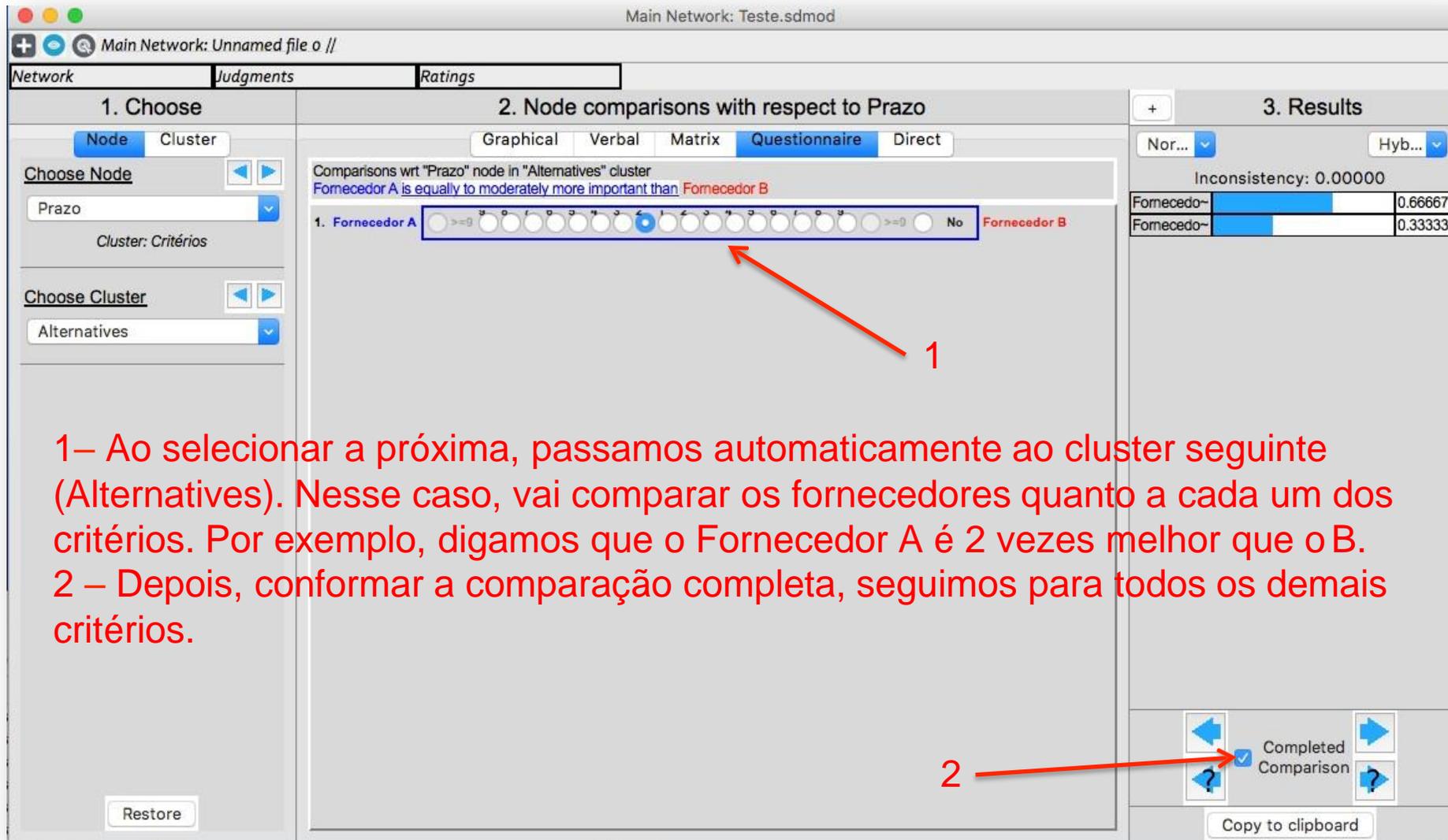
Copy to clipboard

1- Par a par, atribua a relação de valor. Por exemplo, ao se marcar 9 no lado esquerdo, significa dizer que este atributo do lado esquerdo é 9 vezes mais importante que o do direito. Ao marcar 1, significa que ambos são iguais.

2 – Depois verifique a consistência da avaliação. DEVE FICAR ABAIXO DE 0,1.

3– Depois marque que a comparação está completa e siga para a próxima análise.

Versão 3.2 do Super Decisions



Main Network: Teste.sdmod

Main Network: Unnamed file.o //

Network Judgments Ratings

1. Choose

Node Cluster

Choose Node

Prazo

Cluster: Critérios

Choose Cluster

Alternatives

Restore

2. Node comparisons with respect to Prazo

Graphical Verbal Matrix Questionnaire Direct

Comparisons wrt "Prazo" node in "Alternatives" cluster

Fornecedor A is equally to moderately more important than Fornecedor B

1. Fornecedor A >=0 <=0 No Fornecedor B

3. Results

Nor... Hyb...

Inconsistency: 0.00000

Fornecedor-	0.66667
Fornecedor-	0.33333

Completed Comparison

Copy to clipboard

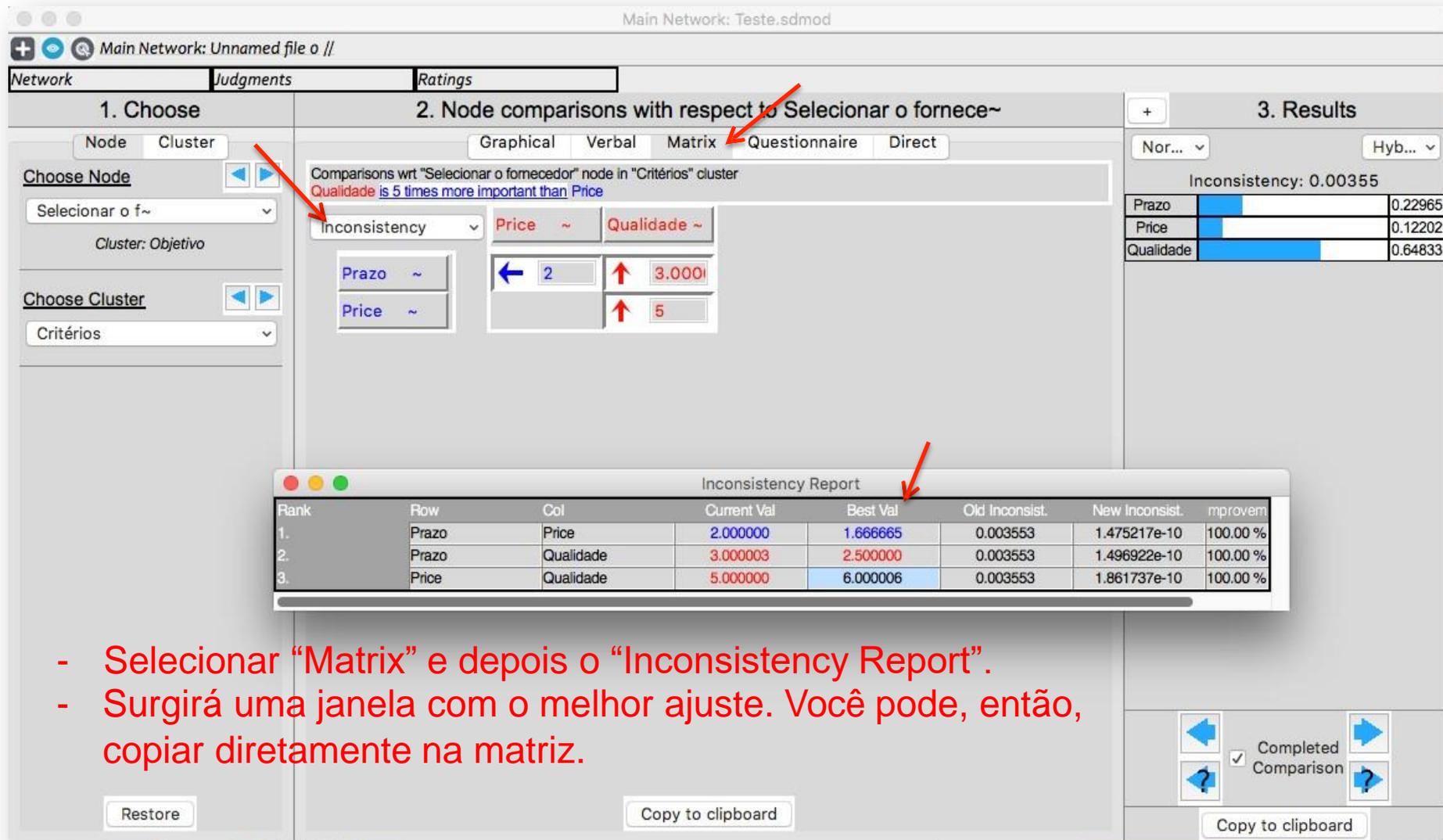
1

2

- 1– Ao selecionar a próxima, passamos automaticamente ao cluster seguinte (Alternatives). Nesse caso, vai comparar os fornecedores quanto a cada um dos critérios. Por exemplo, digamos que o Fornecedor A é 2 vezes melhor que o B.
- 2 – Depois, conformar a comparação completa, seguimos para todos os demais critérios.

Versão 3.2 do Super Decisions

AJUSTE “FINO”, SE NECESSÁRIO...



The screenshot shows the Super Decisions software interface. The main window is titled 'Main Network: Teste.sdmod' and is divided into three panels: '1. Choose', '2. Node comparisons with respect to Selecionar o fornece~', and '3. Results'. The '2. Node comparisons' panel is active, showing a comparison between 'Price' and 'Qualidade' with a value of 5.00000. The 'Matrix' tab is selected. An 'Inconsistency Report' window is open in the foreground, showing a table with the following data:

Rank	Row	Col	Current Val	Best Val	Old Inconsist.	New Inconsist.	Improvement
1.	Prazo	Price	2.000000	1.666665	0.003553	1.475217e-10	100.00 %
2.	Prazo	Qualidade	3.000003	2.500000	0.003553	1.496922e-10	100.00 %
3.	Price	Qualidade	5.000000	6.000006	0.003553	1.861737e-10	100.00 %

Red arrows point to the 'Matrix' tab and the 'Inconsistency Report' window. The '3. Results' panel shows an inconsistency of 0.00355 and a table of results for 'Prazo', 'Price', and 'Qualidade'.

- Selecionar “Matrix” e depois o “Inconsistency Report”.
- Surgirá uma janela com o melhor ajuste. Você pode, então, copiar diretamente na matriz.

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File Design Computations Help

Main Network: Teste.sdmod

Unweighted Super Matrix
Weighted Super Matrix

Limit Matrix
Limit Matrix Options

Cluster Matrix
Priorities

View Report

Synthesize
Synthesize Whole Model

AHP Sensitivity
ANP Sensitivity

Influence/sensitivity

Sanity check

Graphical
Text

Ratings

PODEM SER OBTIDO NO "LIMIT MATRIX / GRAPHICS" OU NO "RATINGS"

Critérios

Price

Prazo

Qualidade

Add Node...

Alternatives

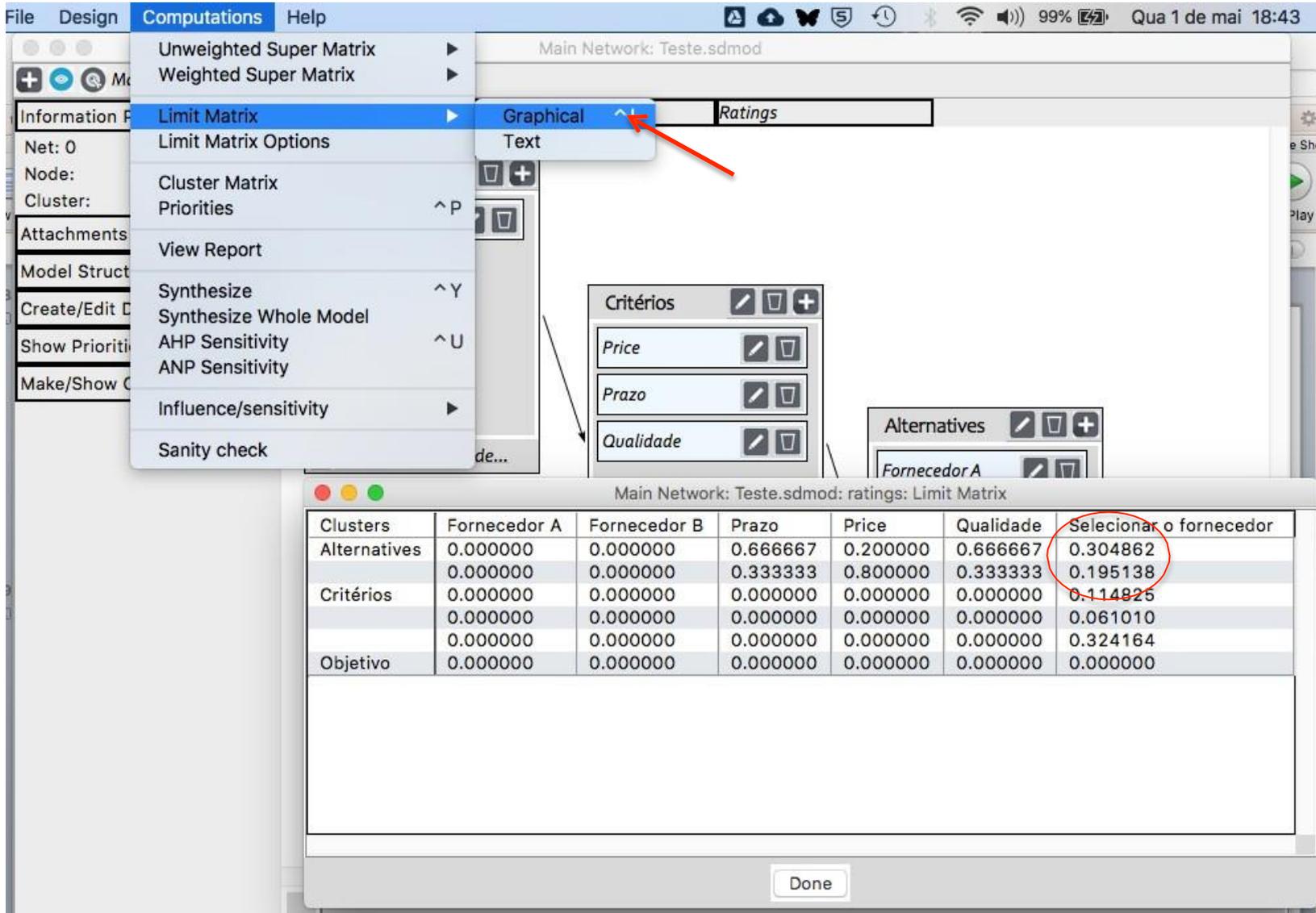
Fornecedor A

Fornecedor B

Add Node...

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The screenshot shows the Super Decisions software interface. The 'Computations' menu is open, and the 'Limit Matrix' option is selected. A red arrow points to the 'Graphical' sub-option. Below the menu, there are panels for 'Critérios' (Price, Prazo, Qualidade) and 'Alternatives' (Fornecedor A). A dialog box titled 'Main Network: Teste.sdmod: ratings: Limit Matrix' is open, displaying a table of values. The value 0.304862 in the 'Selegonar o fornecedor' column is circled in red.

Clusters	Fornecedor A	Fornecedor B	Prazo	Price	Qualidade	Selegonar o fornecedor
Alternatives	0.000000	0.000000	0.666667	0.200000	0.666667	0.304862
	0.000000	0.000000	0.333333	0.800000	0.333333	0.195138
Critérios	0.000000	0.000000	0.000000	0.000000	0.000000	0.114825
	0.000000	0.000000	0.000000	0.000000	0.000000	0.061010
	0.000000	0.000000	0.000000	0.000000	0.000000	0.324164
Objetivo	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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RESULTADOS NO "RATINGS" (MAIS CLARO)...

Step 1: Select criteria for rating alternatives

Double click criterion to add it

Currently chosen ratings criteria:

Select criteria to remove: Remove Criteria

Step 2: Add alternatives

Step 3: Define rating scale for each criterion

Ratings Table

Display Options: Category Names, Category Priorities, Both

Show/Hide: Priorities Column, Totals Column

Calculations: Synthesize, Synthesize whole model, Column Priorities

Manage Ratings: Copy Ratings Table to Clipboard, Clear Ratings Judgments, Revert to Relative Model

To rate an alternative with respect to a criterion, then click the down arrow to display the Rating: Click to select the one you think applies. Move to the next cell by clicking with the mouse

New synthesis for: Main Network: Teste.sdmod: ratings

Here are the overall synthesized priorities for the alternatives. You synthesized from the network Main Network: Teste.sdmod: ratings

Name	Graphic	Ideals	Normals	Raw
Fornecedor A		1.000000	0.609724	0.304862
Fornecedor B		0.640086	0.390276	0.195138

Okay Copy Values

Alternatives	Priorities	Totals