



THE QUALITY OF ENVIRONMENTAL IMPACT STATEMENTS A CASE STUDY ON ROAD PROJECTS IN A SPANISH REGION (Professor Dr. Peris Mora; Dr. Fernández Velasco)



Research Tasks

1 Quality of EIA Reports

Presented at
IAIA' 03 Marrakech
To be presented at
IAIA' 04 Vancouver

- 1.1 EISs characterisation
- 1.2 Review checklist (EC. 1994) plus pondering methodology application
- 1.3 New checklist design and application
- 1.4 Comparison of results

2. Consultation and Public Participation

- 2.1 Public types and procedures characterisation
- 2.2 Project modification

3. Quality of Public Environmental Committee Assessment

- 3.1 Environmental Impact judgement characterisation
- 3.2 New checklist design and application

4. EIA legislation compliance



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A CASE STUDY ON ROAD PROJECTS IN A SPANISH REGION

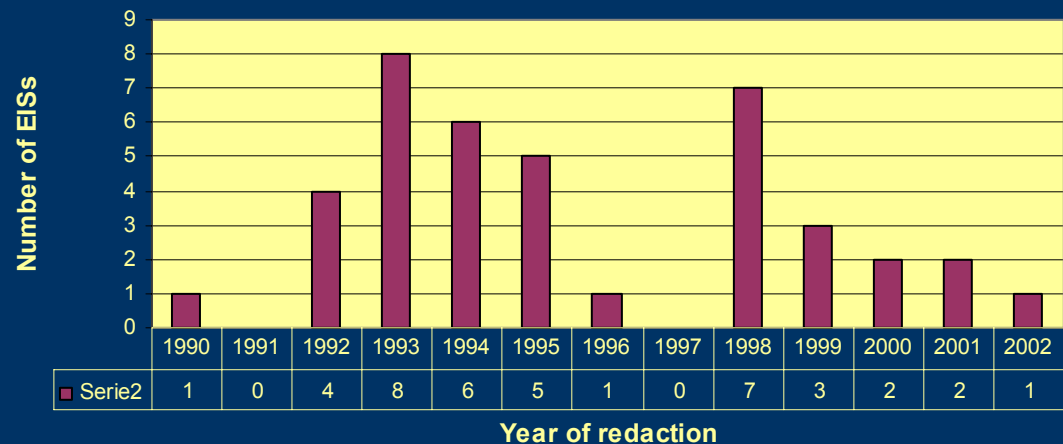
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Global Period: 1990-2002

Partial Periods	Nº of EIS sample
Period 1 (1990-1992)	5
Period 2 (1993-1996)	20
Period 3 (1998-2002)	15

EIS Sample
Global Period (1990-2002)



Type of Projects

Developer

Global Period

Sample

Total EISs issued

Expert teams contracted

Number of experts per team rank

Number of experts per team median

EISs contracted per team rank

Expert redaction team professional degrees number

Road construction

Regional government

1990-2002

40 EISs

100

26

1-15

4.5

1-5

20

Construction budget rank (Euro)

Total construction budget for EISs sample (Euro)

Construction budget median (Euro)

Mitigation measures budget rank (Euro)

Mitigation measures budget median (Euro)

Length of road affected by the project rank (meters)

Length of road affected by the project median (meters)

Extension of EISs rank (pages)

Total extension of EISs (pages)

Extension of EISs median (pages)

631,063-56,018,213

350,785,679

8.769.642

36,548-5,630,017

591,982

580-21,000

6599

19-171

3264

81.6



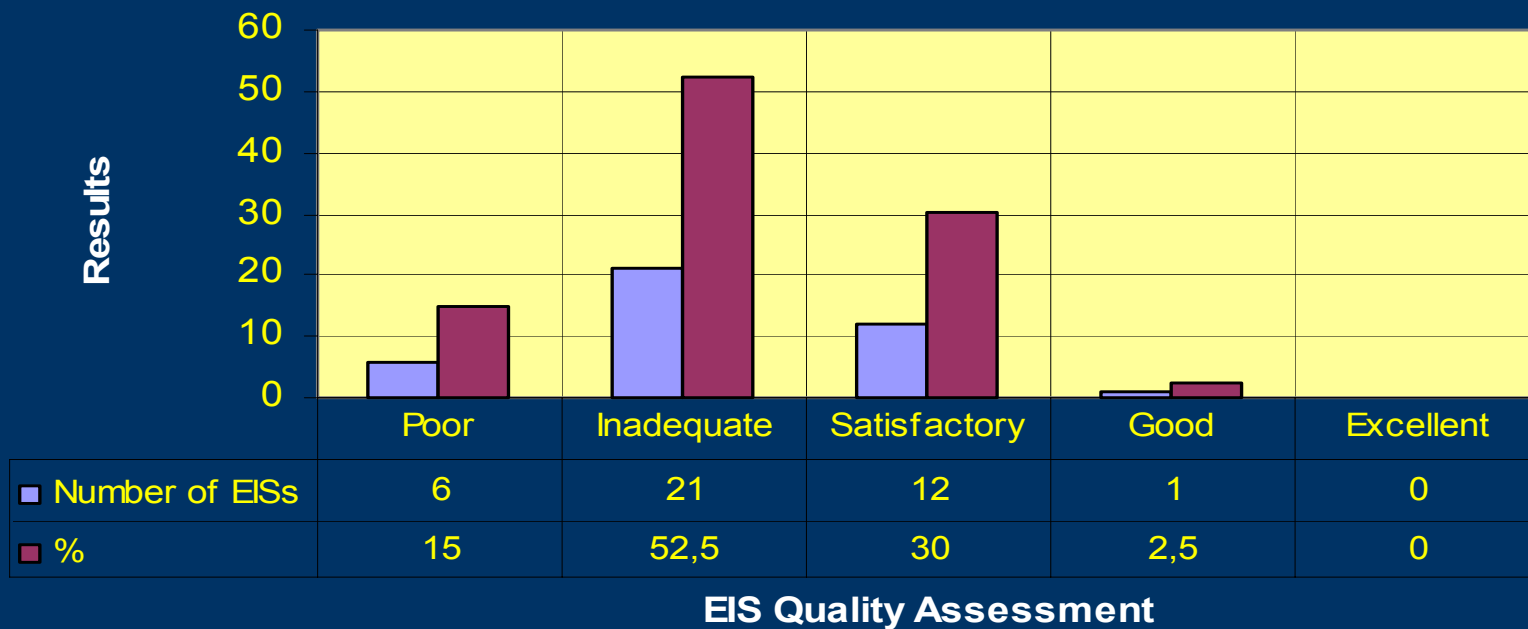
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Review Checklist Application Final Results Global Period (1990-2002)





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QUALITY REVIEW OF ENVIRONMENTAL IMPACT REPORTS: CHECKLISTS

REVIEW PACKAGE (Lee and Colley, 1990)

Areas	Number of Questions
Description of the development	18
Identification, evaluation of key impact	15
Alternatives and mitigation of impacts	8
Communication of results	11
Total	52

REVIEW CHECKLIST (European Commission, 1994)

Areas	Number of Questions
Description of the Project	19
Alternatives	4
Description of the Environment	9
Description of Impacts	11
Mitigation	20
Non-Technical Summary	5
Difficulties Compiling Information	2
General Approach	12
Total	82

EIS REVIEW (European Commission, 2001)

Areas	Number of Questions
Description of the Project	49
Outline of Alternatives	5
Description of the Environmental	22
Description of Key Impacts	38
Description of Mitigation Measures	10
Non-Technical Summary	7
Presentation Quality	12
Total	143

PONDERED CHECKLIST (Peris and Fernández, 2003)

Areas	Number of Questions	Number of Sub-questions
Description of the Project	5	39
Outline of Alternatives	5	16
Description of the Environment	1	55
Description of ecological interactions	5	4
Description of Effects	8	6
Description of Mitigation Measures	6	23
Monitoring Programme	10	0
Non-Technical Summary	5	0
Total	45	143



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Review Checklist Disadvantages

- Too opened in its approach.
- Somewhat confusing qualitative value's assignment
- No relation between Question Level's grading system and EIS Level quality appraisal.
- A great deal of subjectivity into wording, coverage and emphasis of questions.
- The mentioned subjectivity is accumulated in upper levels due to hierarchical arrangement of checklist.
- It does not take into account relative importance of each Area of Environmental Impact Statements.



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Review Checklist Question Pattern

- Is the nature of... clearly indicated?
- Is some indication of the nature...?
- Where appropriate...
- Are they realistic and genuine alternatives...?
- Has the affected environment been defined broadly enough...?
- Were the methods used to investigate...appropriate to the size and complexity of the assessment task?
- Is it clear to what extent the mitigation methods will be effective?
- Is the information objective?



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REVIEW CHECKLIST (European Commission, 1994)

(Fragment of Review Checklist)

1- DESCRIPTION OF THE PROJECT (It shows 11 questions out of 18 of this Area)

Nº	CRITERION	RELEVANT	JUDGEMENT	COMMENT
Principal Features of the Project				
1.1	Are the purposes and objectives of the project explained?	Yes	Complete	
1.2	Are the nature and status of the decision for which the environmental information has been prepared clearly indicated?	Yes	Inadequate	
1.3	Is the estimated duration of the construction phase, operational phase and, where appropriate, decommissioning phase given, together with the programme withing these phases?	No		
1.4	Are the design and size of the project decribed, using diagrams, plans and/or maps as necessary?	Yes	Inadequate	
1.5	Are the methods of construction described?	Yes	Complete	
1.6	Are the nature and methods of production or other types of activity involved in operation of the project described?	Yes	Inadequate	
1.7	Are any additional services (water, electricity, emergency services, etc) or developments required as a consequence of the project described?	Yes	Acceptable	
Land Requirements				
1.8	Has the land taken up by the project site and any associated access arrangements, auxiliary facilities and landscaping areas and by the construction site, including camps for housing workers (if required), been clearly shown on a scaled map?	Yes	Complete	
1.9	For a linear project, has the land corridor, vertical and horizontal alignment and need for tunnelling and earthworks been described?	Yes	Inadequate	
1.10	Have the uses to which the land will be put been described and the different land use areas demarcated?	Yes	Acceptable	
1.11	Has the reinstatement and after use of temporary landtake been described?	Yes	Acceptable	



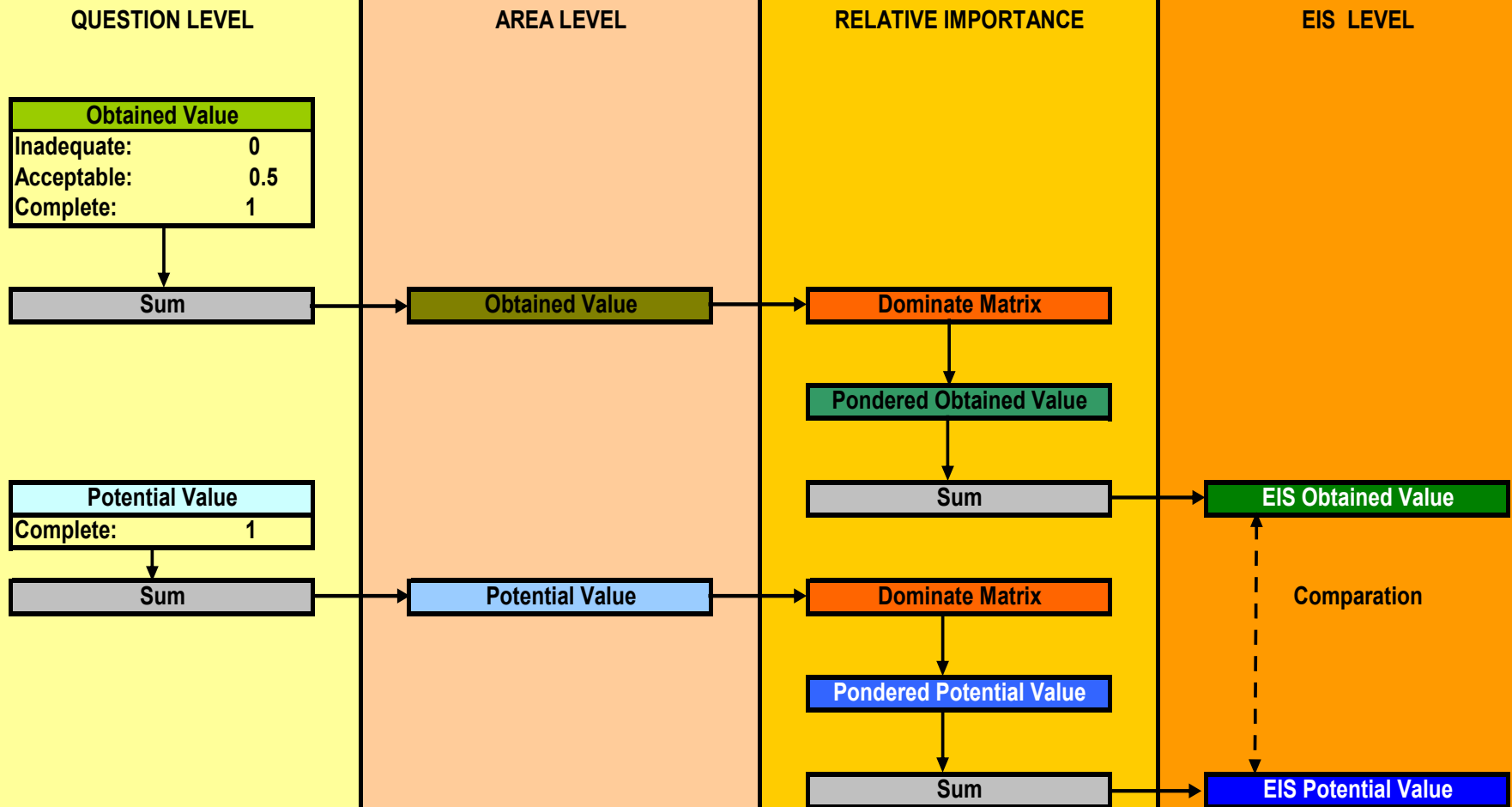
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PONDERED CHECKLIST APPLICATION METHODOLOGY





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PONDERED CHECKLIST (Peris and Fernández, 2003)

Quality Appraisal of Environmental Impact Statements) (Fragment of Pondered Checklist)

1- DESCRIPTION OF THE PROJECT (It shows 2 questions out of 5 of this Area)

Nº	QUESTION	YES NO	Judgement (I/A/C)	Partial Value (0/0,5/1)	Obtained Value	Potential Value
1.1	Location:					
	Description	Y	Complete	1		
	Situation maps	Y	Complete	1		
	Project plans and diagrams	Y	Complete	1		
	Total Paragraph 1.1				3	3
1.2	Description of proposed project, focused to main environmental aspects of the new activity:					
	Design conditions	Y	Acceptable	0.5		
	Horizontal alignment: plant plan's geometrical characteristics of design	Y	Acceptable	0.5		
	Vertical alignment: section plan's geometrical characteristics of design	Y	Inadequate	0		
	Description of connections	N				
	Description of structures and drainage construction	Y	Complete	1		
	Earth works: description of land removal, levelling and embankments	Y	Complete	1		
	Earth work balance and using criteria	Y	Inadequate	0		
	Description of road platform and pavement: materials	Y	Inadequate	0		
	Maps, plans and diagrams of all previous questions	Y	Inadequate	0		
	Total Paragraph 1.2				3	8



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EIA Report 36(2000): DOMINATE MATRIX

PONDERED CHECKLIST: AREA LEVEL

Review Areas

- 1 Description of the Project
- 2 Outline of Alternatives
- 3 Description of the Environment
- 4 Description of Ecological Interactions
- 5 Description of Effects
- 6 Description of Mitigation Measures
- 7 Monitoring Programme
- 8 Non-Technical Summary

	1	2	3	4	5	6	7	8	Ordinal	Score 1-10
1		0.3	0.6	0.4	0.3	0.3	0.3	0.8	3	5.7
2	0.7		0.7	0.7	0.4	0.3	0.6	0.9	4.3	8.2
3	0.4	0.3		0.4	0.4	0.2	0.3	0.8	2.8	5.3
4	0.6	0.3	0.6		0.3	0.3	0.4	0.8	3.3	6.3
5	0.7	0.6	0.6	0.7		0.3	0.6	0.9	4.4	8.4
6	0.7	0.7	0.8	0.7	0.7		0.6	1	5.2	10
7	0.7	0.4	0.7	0.6	0.4	0.4		1	4.2	8
8	0.2	0.1	0.2	0.2	0.1	0	0		0.8	1.5

Review Area's relative importance score:

6	Description of Mitigation Measures	10
5	Description of Effects	8.4
2	Outline of Alternatives	8.2
7	Monitoring Programme	8
4	Description of Ecological Interactions	6.3
1	Description of the Project	5.7
3	Description of the Environment	5.3
8	Non-Technical Summary	1.5



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EIA REPORT 36(2000)

PONDERED CHECKLIST: EIS LEVEL

	A	B
	Obtained Score	Potential Score
1 Description of the Project	15.5	36
2 Outline of Alternatives	5	16
3 Description of the Environment	26.5	53
4 Description of Ecological Interactions	1.5	7
5 Description of Effects	7	11
6 Description of Mitigation Measures	8	19
7 Monitoring Programme	4.5	10
8 Non-Technical Summary	4	5
	72	157

A	C		B	D	
Obtained Score	Dominate Matrix Results	AXC	Potential Score	Dominate Matrix Results	BXD
15.5	5.7	88.35	36	5.7	205.2
5	8.2	41	16	8.2	131.2
26.5	5.3	140.45	53	5.3	280.9
1.5	6.3	9.45	7	6.3	44.1
7	8.4	58.8	11	8.4	92.4
8	10	80	19	10	190
4.5	8	36	10	8	80
4	1.5	6	5	1.5	7.5
		460.05			1,031.3

Grading scale	
0-206.2	Poor
206.3-412.5	Inadequate
412.6-618.7	Satisfactory
618.8-824.9	Good
825-1,031.3	Excellent

"Satisfactory Score"



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AREAS FROM BOTH TOOLS THAT CAN BE COMPARED

REVIEW CHECKLIST (European Commission, 1994)

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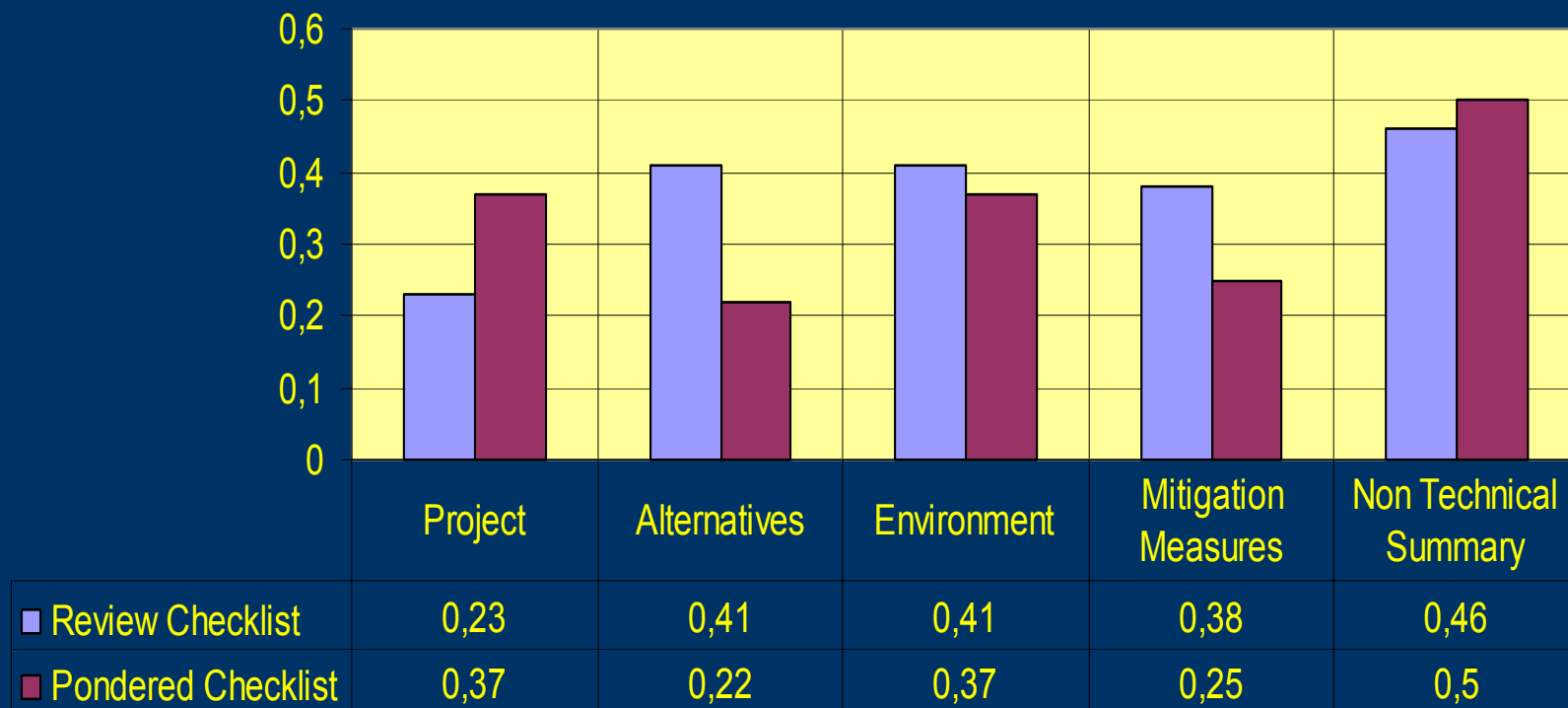
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COMPARATION OF AREA LEVEL CHECKLISTS RESULTS

Ratio (Pondered Obtained Value/Pondered Potential Value)



Areas EI Statements



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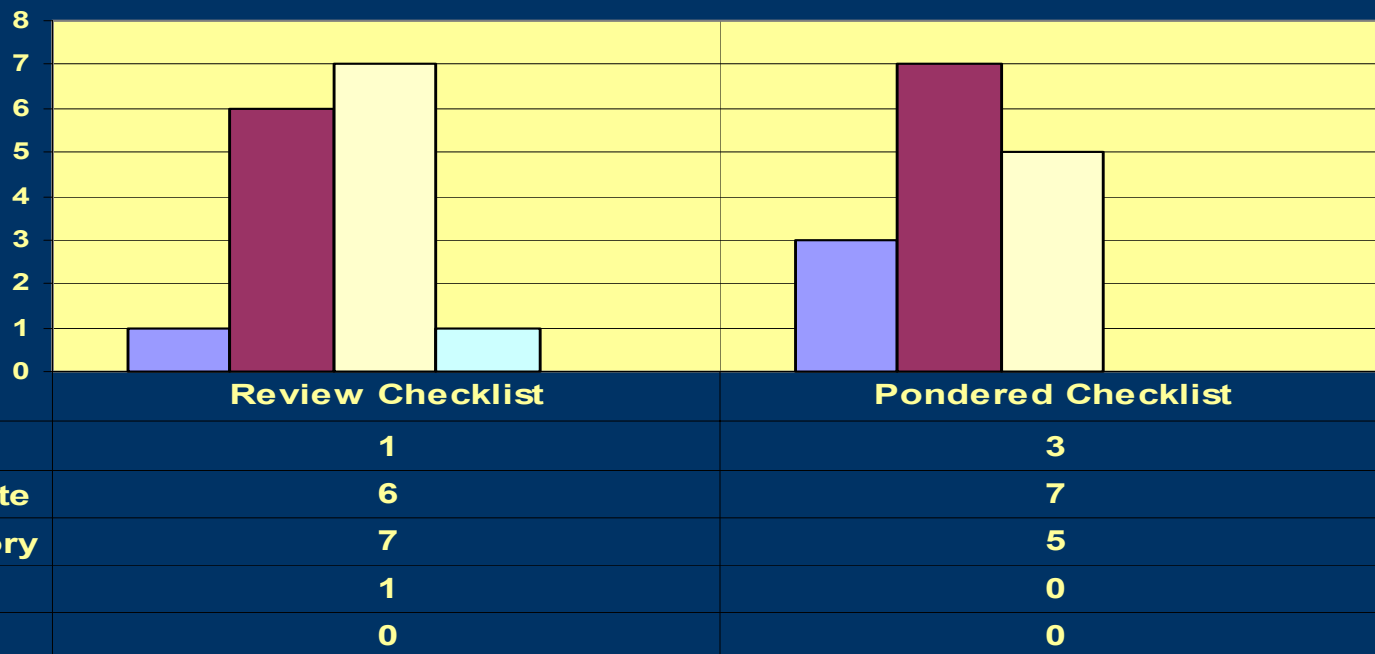
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Comparison of EIS's Quality Evaluation Results on Review Checklist and Pondered Checklist Application Period 3 (1998-2002)

Results



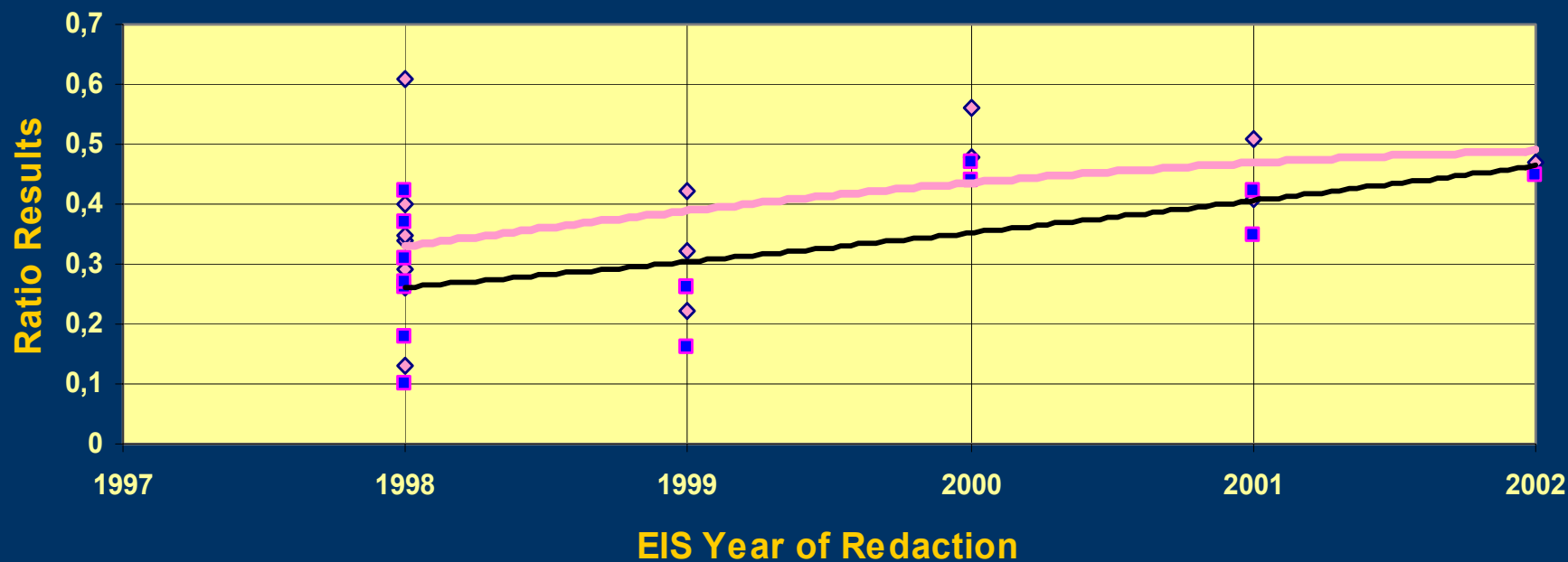
Number of EIS's



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Ratio Evolution (Pondered Obtained Value/Pondered Potential Value) EIS Level Period 3 (1998-2002)



◆ Review Checklist ■ Pondered Checklist — Polinómica (Review Checklist) — Polinómica (Pondered Checklist)



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Pondered Checklist Advantages

- Question pattern grants a great deal of objectivity and restriction to quality results.
- Methodology used to link quality assignment between Question Area and EIS Levels, guarantees rigour.
- It incorporates two relevant Areas and sets aside another two not so important, which could affect final quality result.
- Facilitates checklist expert application, diminishing expert's point of view.

Pondered Checklist Application Sample Results

- There is quality results convergence between both checklists application from year 2000, obtaining equal values 4 out of 5 EIS's.
- 67.7% of Period 3 (1998-2002) EI Statements obtain unsuitable results, and none of them Excellent or Good score.



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Research Tasks

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