

# EIA PROCESS-RELATED BARRIERS IN TRANSPORT PROJECTS IN THREE EUROPEAN COUNTRIES

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## Abstract

Environmental Impact Assessment (EIA) in the transport field is frequently discussed from different points of view. Beyond technical issues (e.g. impacts measurements), the literature indicates the existence of some process-related barriers hindering an effective EIA implementation for transport projects (e.g. lack of collaborative work; transparency; etc.). Most of academic attention has primarily addressed the technical improvements, paying limited attention to the relevance of those process-related barriers. To address that, the paper aims to explore and compare how EIA is experienced and perceived by professionals in three South European countries (Italy, Portugal, and Spain), offering in-depth insights into EIA process-related barriers linked to transport projects. Findings were obtained through an on-line survey completed by 294 professionals that represent the two main groups involved: EIA-developers and transport planners. Results revealed four main types of common process problems: (i) EIA timely; (ii) alternatives assessment; (iii) monitoring system; (iv) public participation. Spain seemed to be the country where participants find more genuine process-related barriers, while participants from the other countries shared their views more frequently. Main differences between the barriers identified by transport planners and environmental consultants were related to review how to improve the process.

## Introduction

The application of instrumental rationality to transport projects is coming under fire (Bertolini, 2007), questioning the effectiveness of assessment instruments firmly rooted in rational schemes, such as Cost–Benefit Analysis, Planning Support System, and others. Collaborative approaches are emerging, located at the crossroads of the domains of the stakeholders and professionals that frequently take part in the assessment process. The use of the Environmental Impact Assessment (EIA) for decision-making in transport projects is a case in point; it is distinguished by a growing number of involved actors, with different professional interests, languages and approaches to transport practice.

Over the last decades, the academic literature has mostly focused on improving EIA by addressing technical obstacles (e.g., the measurement of cumulative impacts, the design of corrective measures). This approach was associated with the rational idea that more accurate assessment results are obtained by increasing the sophistication of EIA as a technical instrument. However, the abovementioned picture is far from complete, fundamentally when EIA is seen from a wider perspective, including its role in collaborative transport planning approaches. For this reason, identifying and addressing

process-related barriers -beyond technical issues- seems crucial to make EIA more efficient in the transport field (Soria-Lara et al., 2015). EIA process-related barriers refer to hindrance in the involvement and interaction of actor groups during EIA processes, impeding higher EIA effectiveness (e.g., lack of trust between agents involved).

This paper aims to gain more insight into the previous discussion by responding to the following research questions: which are the main process-related barriers of EIA in transport projects, according to professionals, and are there significant differences in perception of professionals from different countries? To respond those questions, the research aims to identify, explore, and compare the EIA process-related barriers faced by transport planners and environmental consultants in three South-European countries (Italy, Portugal, and Spain).

## **Method**

An online survey was elaborated, focusing on perceptions from transport planning practice in these countries as well as analysing other reported process problems from other supported tools. In particular, the identification of potential process-related barriers to elaborate the questionnaire was inspired by other studies that analysed process-related barriers for both EIA and other similar ex-ante evaluation tools, such as Cost-Benefit Analysis (and Planning Support Systems).

The online survey presented two types of questions, rated statements and open-ended questions, structured in three main blocks: (i) professional information, (ii) general statements about EIA in decision-making, and (iii) barriers impeding EIA effectiveness. In block 1, participants were asked to provide basic professional information such as company, their role, and level experience. They could choose from the following options: (i) transport planner (when their job was mainly connected to making decisions on approving and/or designing transport projects); environmental consultant (when their job was mainly related to evaluating environmental impacts by using EIA); and (iii) dual background as transport planner and environmental consultant. The main part of the survey (blocks 2 and 3) consisted of 27 rated statements on both the role of EIA in decision-making and the barriers impeding effective EIA implementation. For each statement, a five points Likert-scale was used (strongly agree, agree, neutral, disagree and strongly disagree). In the open-ended questions, participants were asked to elaborate on the most important changes needed for improving EIA in the transport field.

## **Results**

In the first block of the survey, two major issues can be highlighted. First, the vast majority of Spanish respondents (86.52%) felt that EIA was implemented too early in transport projects, while the others did not see this statement as a barrier. Second, a general agreement was found among respondents from all three countries (above 60% per country) in recognising that EIA has a marginal role in transport projects. Other statements included in this block of the survey focused on whether EIA is insufficient for decision-making as well as whether the quality of EIA is sufficient. A total of 60% of

Italian, 61.90% of Portuguese, and 73.03% of Spanish participants agreed or strongly agreed that EIA is insufficient for adequately supporting decision-making, while they shared a neutral view regarding the quality of EIA in the transport sector

In the second part of the survey, participants were asked to identify barriers impeding EIA effectiveness. Among the 21 potential barriers, respondents from all three countries clearly identified three major problems, fundamentally related to the main EIA methods and results. The first was that the assessment of alternatives in the EIA process is irrelevant. This major problem was selected by 94.11% of Italian, 83.33% of Portuguese, and 77.52% of Spanish respondents. The second major problem was that the EIA monitoring system is irrelevant for guiding further actions. This statement was selected as a process-related barrier by 71.76% of Italian, 80.95% of Portuguese, and 55.05% of Spanish respondents. The third main problem focused on the low potential of EIA to trigger an effective process for refining project alternatives. This view was the strongest in Portugal (78.57%), while roughly two-thirds of respondents from Italy (67.06%) and Spain (65.17%) concurred.

More than a half of the survey's general statements showed statistically significant differences based on the Kruskal-Wallis test, with two out of the five potential problems demonstrating significant difference: (i) *EIA implementation is too late*; (ii) *EIA implementation is too early*. In both cases, the Mann-Whitney U test signalled that these differences are especially pronounced between respondents from Italy and Spain. A higher number of Italian participants stated that "*EIA was usually implemented too late, in a moment in which many characteristics of the transport projects cannot be changed, including the major selection of project alternatives*". By contrast, a higher number of Spanish respondents signalled that "*EIA was usually implemented too early and many project characteristics have been weakly detailed*".

For the block of potential barriers impeding EIA effectiveness, statistical differences were found for 13 of the 21 evaluated questions. Among them, three barriers evidenced statistical differences among the three countries, based on comparisons by pairs via the Mann-Whitney U test: (i) *Evaluation time is too long*; (ii) *EIA is too expensive*; and (iii) *Limited cooperation between the public and private sectors*. Regarding the first statement, a higher number of Italian and Spanish participants signalled that the cost of EIA affects its effectiveness, while a lower number of Portuguese respondents perceived EIA cost as a process-related barrier. Finally, Spanish participants highlighted the *limited cooperation between public and private sectors* during EIA implementation as a problem, while Italian and Portuguese respondents did not perceive it as a relevant barrier.

It is seen that the views of Spanish respondents diverged significantly more from their counterparts' opinions, while the Italian responses were the least divergent. In the case of Italy, prominent differences were found regarding the *specificity of EIA*. Such significant differences were also found in the case of Portugal with respect to: (i) *EIA is too comprehensive*; (ii) *EIA outcomes are credible*; and (iii) *EIA as a tool for refining alternatives*. Finally, differences between Spain and the other countries were found at 0.05 p-level for the following: the Spanish recognize *EIA as too rigid*, while the others do

not; Spanish participants do not see significant problems with *limited stakeholder involvement*, while participants from the other countries rate this barrier as relevant; Spanish respondents are neutral regarding *the poor suitability of assessment methods* and the *irrelevance of the EIA monitoring system*, while the other participant had diverging views; Spanish participants weakly see *the monitoring system for guiding actions irrelevant* in comparison with the respondents from the other countries.

## Conclusions

The results highlight the following shared process-related barriers: (i) EIA timing, (ii) assessment of alternatives, (iii) monitoring system, and (iv) public participation. These results are aligned with the findings of existing literature, which underlines the marginal and weak role of EIA in the decision-making process. The common perception of those barriers in all three contexts can be seen as emanating from the standardized umbrella legislation at European Union level, which is transposed into national legislative frameworks. Moreover, although the approach used in this research has been applied to the specific field of transport projects, its potential use in other fields could help to provide a more comprehensive overview about EIA process-related barriers and their possible solutions.

Regarding *EIA timing and the assessment of alternatives*, participants declared as process-related barriers that EIA is *implemented too early* as well as its inability to foster *effective assessment of alternatives*. Although the fact that EIA is implemented too early can be positive as EIA can have a great impact on the selection of the most suitable alternatives, a relevant number of environmental consultants declared that there is a certain minimalism in the assessment exercise reinforced by assessments conducted too early and with poor information from the projects carried out. However, transport planners show an opposite view.

The shortcoming in the *monitoring system for guiding actions* was another common barrier shared in all three contexts. Moreover, there is a general consensus between transport planners and environmental consultants in the negative effects of this barrier on EIA effectiveness. This finding also follows existing EIA research, which has highlighted EIA's weak capacity to operationalize follow-up in the projects assessed. This problem received special attention in the 2014 EIA Directive (2014/52/UE).

Further research topics related to the potential limitation of this study can explore homogenization in EIA processes and legislation across countries – particularly for cross-border transport projects – which could potentially decrease the perception of process-related barriers. Another topic for further research can be based on extending the analysis carried out to transport plans under Strategic Environmental Assessment. There is also a need for experiential research, involving real- or close-to-real-life experiments aimed at overcoming the identified process-related barriers. Finally, extending this type of comparisons to other countries across Europe could provide a more comprehensive picture about EIA process-related barriers in transport planning.

## References

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