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# Assessing Cycling Investments in EU Structural Funds

## A Quantitative and Qualitative Analysis of 090, 043 and 083 Coded Interventions

## Publishing Credits

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## This is the third publication in a series of reports by ECF that explores cycling investments in EU Structural Funds.

To understand the breadth and depth of cycling investments in Europe, ECF publishes reports analysing EU Structural Funds through a variety of approaches.

The first in this series is the 2023 policy brief "**An analysis of cycling investments by EU Member States using EU Structural Funds**". The brief compares planned and implemented cycling investments through a systematic analysis of the Cohesion Open Data platform.

The second publication is the 2025 report "**Using EU funds to promote cycling: Lessons learned from good practice examples**". The report provides a detailed qualitative overview of EU funded cycling projects, identifying good practices that may inspire local, regional and national stakeholders to effectively use European funds to implement similar projects in their area.

Lastly, this report focuses on the formal side of Structural Fund investment reporting. It specifically investigates the discrepancies between intervention fields/categories of intervention and the projects reported under them in Kohesio.

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# 1. Executive Summary

This report examines how cycling investment is reported within the EU Structural Funding framework. Its objective is not limited to providing a quantitative estimate of cycling investment in terms of EU contribution, but to providing a finer grained, reliable analysis of the accuracy, consistency and reliability of existing reporting practices.

The analysis focuses on projects financed through the European Regional Development Fund (ERDF) and Cohesion Fund (CF), as reported on the European Commission's *Kohesio*[1] portal. Specifically, the study analysed data reported under three Categories of Intervention (CIs) which were found to contain cycling investment. Below, the CIs are presented in association with their nomenclature and financing period.

- CI 090 – cycle tracks and footpaths (2014-2020)
- CI 043 – clean urban transport infrastructure (2014-2020)
- CI 083 – cycling infrastructure (2021-2027)

Together, these categories account for 7,713 projects and approximately €20.7bn in reported EU contribution at the time of data extraction (October 2025).

While, to our knowledge, research has until now relied on CI-level aggregation to estimate cycling investment, the findings of this research prove that conclusions derived from this method risk overestimating financial figures. The study therefore applies a finer grained approach, derived from a conceptual problematization of Categories of Intervention (CIs). This approach moves away from CIs, focusing instead on project titles and descriptions to verify the precise share of EU contribution to cycling investment within the CIs listed above.

## 1.1 The necessity for this research

Quantifying active mobility, cycling-only or any other investment at the EU level appears simple in theory. If CIs universally and unequivocally corresponded to the projects referred to by their nomenclature, it would be sufficient to aggregate all investments reported under them and obtain an overall financial figure. In practice, however, this assumption does not hold.

Several systematic issues are in fact present across data reported in *Kohesio and the* CI nomenclature system:

1. Broad and overlapping CI nomenclature: especially during the 2014-2020 financing period, the nomenclature system allows for pedestrian projects to be aggregated with cycling ones. Moreover, previous ECF research[2] shows that cycling projects are also present under the more general CI 043.

[1] https://kohesio.ec.europa.eu/en/
[2]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf

2. Inconsistent national reporting practices: including vague or incomprehensible project descriptions, reporting of a single project under multiple CIs or under CIs that do not accurately reflect the project description.
3. Data quality limitations within *Kohesio:* including delayed data uploads, imprecise geodata, inconsistent formatting and imprecise translations.

These shortcomings create a significant disparity between reported and verifiable investment, with important repercussions of EU accountability and transparency. The report attempts to make a first step towards filling this knowledge gap.

## 1.2 Methodological approach

To strike the balance between generalizability and accuracy, the study adopts a hybrid qualitative-quantitative methodology.

### 1.2.1 Quantitative content analysis

All 7,713 projects reported under CIs 090, 043 and 083 were subjected to an automated content analysis based on a purpose built open-source python model. The model queries projects title and description in national and English language to locate keywords associated to *pedestrian, cycling* or *other* mobility investments. As a result of keyword combinations, the python assigns the following Cycling Scores (CS).

- **CS0**: Neither cycling nor pedestrian component detected.
- **CS1**: Pedestrian component is detected alone or in presence of other non-cycling components.
- **CS2**: Cycling component is detected in combination with other, non-pedestrian components.
- **CS3**: pedestrian and cycling components are contemporarily detected (possibly in association with other components).
- **CS4**: exclusively cycling components are detected.

Only projects obtaining a Cycling Score of 2, 3 or 4 were considered cycling-related as part of this study.

The model was validated through a manually coded stratified sample achieving very high inter-coder reliability while remaining fully transparent, replicable and amendable for further research.

### 1.2.2 Qualitative case studies

To nuance the quantitative findings, 16 brief case studies rooted in desk research and data triangulation are presented.

The case study provides examples of intra-CI and intra-CS variability. In other words, this section illustrates examples of why misreporting occurs, how ambiguous or inflated project descriptions emerge, and what constitutes both poor and good reporting practice.

## 1.3 Key quantitative findings

Across the full dataset:

- 7,713 projects were analysed.
- €20.7bn in reported EU contribution to cycling investment was scrutinized.
- 4,059 projects were found to be related to cycling.
- 3,654 projects were found to be likely not related to cycling.

Therefore, by considering the contents of the three CIs**, it is possible to estimate a € 6.8 bn EU contribution towards cycling related projects across the 2014-2027 period**.

### 1.3.1 CI 090 – cycle tracks and footpaths. (2014-2020)

CI 090 is the primary category used to report cycling investment in the 2014-2020 financing period. However, the necessary presence of pedestrian investment caused by the nomenclature leads to difficulties in estimating true cycling investment figures. Under this CI:

- 3,065 projects are reported.
- Amounting to a €3.5bn EU contribution.

The quantitative analysis reveals that:

- 73.7% of projects have an explicit cycling component.
- €930 million in EU contribution is dedicated to projects that are not related to cycling or are exclusively pedestrian oriented.
- The EU contribution to exclusively cycling investments (CS4) accounts for just €0.66bn.

Several member states exhibit misclassification practices driven by:

- Vague urban regeneration projects that do not mention a cycling component.
- Tourism and nature conservation-oriented interventions.
- Infrastructure projects that only cosmetically account for cycling.
- Formatting and translation failures that obscure project intent.

### 1.3.2 CI 043 – clean urban transport infrastructure. (2014-2020)

CI 043 is not an exclusive cycling category, yet the quantitative model confirmed previous findings claiming significant cycling investments are reported under its umbrella. CI 043 contains:

- 3,713 reported projects.
- €16.1bn EU contribution.

The quantitative analysis reveals that:

- €3.4bn (21.1%) relates partially or fully to cycling.
- €160 million in EU contribution is exclusively absorbed by cycling investment as:

    - Cycle tracks
    - Bike sharing systems
    - Interventions on the EuroVelo route
- Cycling investments are often embedded in projects as:
    - Intermodal hubs
    - Sustainable Urban Mobility Plans

The significant presence of cycling investment across this CI demonstrates the inconsistency in the application of the 2014-2020 nomenclature systems, proving that estimates based on CIs alone often lead to over- or underestimation.

### 1.3.3 CI 083 – cycling infrastructure. (2021-2027)

Conclusions derived from the analysis of this CI are fundamentally preliminary in nature, as only 4 countries have until now reported projects under it. CI 083 was introduced to provide a dedicated cycling category, removing pedestrian infrastructure form its scope. However, a pedestrian exclusive counterpart was not developed, leading to an increase rather than a decrease in CI inconsistency under the 2020-2027 financing period. CI 083 contains:

- 935 reported projects (from only four member states)
- €1.1bn reported EU contribution to cycling investment

The quantitative analysis reveals that:

- 72.2% the EU contributions relate to cycling.
- Projects exclusively targeting pedestrians now represent circa 30% of the total projects, an increase compared to CI 090.
- Exclusively cycling investment was not the major target of reported investment in any of the four countries.

These results prove that introducing a new, narrower CI is insufficient without the necessary counterparts and more precise reporting guidelines.

## 1.4 Structural drivers of misreporting

A combination between manual data inspection and the results of the analysis led to the identification of recurring causes of misreporting:

- Multi-CI classification, that inflates budgets estimates by attributing the costs of unrelated project components to the CI of reference.
- Overly generic project descriptions, often presented in standardised fashion and sometimes not related to the project itself.
- Ambiguous infrastructure terminology, leading to possible errors and lack of clarity in understanding the investment target.
- Absence of pedestrian and multimodality-oriented CIs, leading to the reporting of projects related to the two themes under cycling-oriented CIs.

- Presence of non-related ancillary investments in cycling exclusive projects, as the renovation or development of car parks, renovation of the road surface and more.

Notably, the largest EU contributions to investments under CIs 090 and 083 are absorbed by multi-CI projects, where cycling tends to be a minor component. Because multi-CI projects typically involve significant expenditures, even a small number of them significantly inflates the budget estimates for the two CIs.

## 1.5 Implications for EU policy and monitoring

The findings of this report have implications that affect the reporting system and its analysis.

First, they demonstrate that current reporting forms and practices are unreliable for the obtainment of precise investment estimates. High accuracy in the reporting on the type of investment is particularly important when the EU has set certain minimum thresholds for climate or digital related investments.

Second, they show that headline investment figures are likely inflated by factoring in non-related projects and ancillary components. Consequently, caution must be adopted when identifying positive trends in the growth of cycling and other investments.

Third, the study emphasizes the need for:

- The development of analytical tools that transcend the reliance on CIs alone.
- The need for a more refined reporting system, that accounts for more CIs and establishes clear reporting rules and guidelines on the interpretation of infrastructure specific terms.
- The need for an improved, more transparent dataset which can be used for more systematic analysis.

# 2. Introduction

Quantifying and analysing EU contributions to cycling investment appears simple in principle, however a deeper analysis reveals the contrary.

In a previous report, we have overviewed the same CIs (090, 043 and 083) relying on the *Cohesion Open Data Platform*, where investment estimates are provided[3]. Following the publication of that report, we received feedback on discrepancies between reported investments and the extent to which they were felt on the ground.

The feedback prompted the development of this study, that stands as a first attempt to provide a systematic analysis of the correspondence between reported and effective cycling investments. To do this, the study relies on hybrid methodology, where EU level estimates are provided by a quantitative content analysis nuanced by a qualitative case study presentation. To obtain these results, the research pivots on a different but complementary dataset to *Cohesion Open Data Platform*: *Kohesio.*

On a formal level, an estimate of EU contribution to cycling investment would consist of the sum of EU contributions reported across cycling related CIs 090 and 083. However, two issues were detected before the research took place. Firstly, previous ECF publications show that cycling investment is also reported under the less specifically cycling oriented CI 043[3]. Secondly, a precise estimate of EU contribution to cycling investment would not be possible for the 2014-2020 financing period as CI 090 combines cycling and pedestrian investments under one umbrella. Preliminary data inspection revealed two other issues: misreporting, where some projects listed under CIs 090, 043 and 083 did not correspond with the CI nomenclature; and formatting issues, where some terms were not correctly translated or formatted within project titles and descriptions leading to the impossibility to establish whether the project relates to cycling or not.

Consequently, there is a need for a more precise model to filter out truly cycling related investments from the CIs, that this report attempts to establish. Within this section, a detailed introduction to the research is provided. The section contains subchapters on the policy context, gaps, problem statement, research question, research approach and overall report structure.

## 2.1 Policy context

In this section, the policy context is presented. This includes the main elements on that the report pivots:

- Funds: Cohesion Fund (CF); European Regional Development Fund (ERDF)
- Categories of Intervention: 090, 043 and 083
- *Kohesio*

[3]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf

### 2.1.1 Funds: CF and ERDF

The Cohesion Fund provides support to EU countries with a GDP below 90% of the EU27 average to improve social, territorial and economic cohesion in EU territory[4]. The fund applies to Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia, Slovakia. Its total budget amounts to € 63.4 billion spread between Trans European Transport Networks (TEN-T) and environment.[5]

The European Regional Development Fund applies to all 27 member states with the similar objective of reducing regional economic, social and territorial disparities. Within the 2021-2027 financing period, the ERDF has the objective of making European regions "more competitive and smarter, more connected, greener and closer to its citizens"[6].

The implementation of both funds operates in shared responsibility between recipient member states and the European Commission[7]. Within the framework of these funds, significant cycling related projects have been financed.

### 2.1.2 Categories of Intervention (CI)

Categories of Intervention are an identification metric present in *Kohesio*. These correspond to what is referred to as Intervention Fields (IF) in EU legislation. Declaring CIs or IFs is a transparency measure, part of the legal obligations mandated to member states in investment reporting[8].

For this study, three Categories of Intervention have been selected: 090, 043 and 083. This decision follows the identification of these CIs as those being most relevant to cycling. 090 and 083 are in fact cycling specific CIs, respectively for the 2014-2020 and 2021-2027 financing periods. Additionally, while CI 043 is not precisely targeted to cycling, previous ECF research has proved that it contains a significant amount of cycling related investments[9]. Below the nomenclature and total count of CI projects as of October 2025 are reported:

- 2014-2020 financing period
    - 090: *cycle tracks and footpaths* **3,065.**
    - 043: *clean urban transport infrastructure (including equipment and rolling stock)* **3,713.**
- 2021-2027 financing period

[4] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/cohesion-fund-cf_en
[5] https://ec.europa.eu/regional_policy/funding/cohesion-fund/2014-2020_en
[6] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/european-regional-development-fund-erdf_en
[7] http://data.europa.eu/eli/reg/2021/1060/oj
[8] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013R1303; https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1060
[9]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf

- 083: *cycling infrastructure* **935.**

While these CIs all relate to cycling, CI 083 is the only one that exclusively relates to it. Therefore, it is the only one that, on a theoretical level, can be used to estimate the EU contribution to cycling investment in its totality. Due to the nomenclature assigned to the other two, CI 090 financial information will necessarily include pedestrian projects; and CI 043 financial information will necessarily include a wide array of other, non-cycling investments.

While CIs are a good indicator of where to look for cycling investments, any investment figure derived uniquely form calculating their sum will be inflated by the presence of non-related projects.

### 2.1.3 Kohesio

The dataset used for this study has been retrieved from *Kohesio*[10] in October 2025. The portal offers an overview of EU funded regional projects, both happening under the framework of CF and ERDF.

While complementary to *Cohesion Open Data*, the two datasets differ in the nature of information provided to the researcher. While *Cohesion Open Data* offers aggregate information at a program, fund, country or thematic level; *Kohesio* presents detailed project specific information. These include extensive project descriptions, investment figures and geodata. Consequently, *Kohesio* was chosen as its content allows for more precise evaluations of cycling investments that does not rely on CIs alone.

In this dataset, projects are tied to Categories of Intervention (CIs) easing data filtering. Responsibility for the categorization of projects falls on member states and managing authorities, that update the files every six months as per common Provision Regulations CPR - Regulation (EU) No 1303/2013[11] for the 2014-2020 period; and every 4 months as per Regulation (EU) 2021/1060[12] for the 2021-2027 period.

Regulations mandate member states to report projects on their national portals. These portals act as data sources for *Kohesio,* in which they are normalised and published[13]. Due to the two-step process, there is a likely delay happening between publication on national portals and *Kohesio*. As reporting is responsibility of member states, the European Commission effectively any responsibility for data inaccuracy or misrepresentation within the dataset[13].

[10] https://kohesio.ec.europa.eu/en/
[11] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013R1303
[12] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1060
[13] https://kohesio.ec.europa.eu/en/faq

## 2.2 Existing gaps and reporting issues

As previously stated, CIs cannot be the only metric used to estimate cycling investments. Moreover, these estimates are made harder to develop due to three shortcomings present in *Kohesio*:

1. **Delayed reporting**: While data is updated regularly, this is done with a substantial delay. Projects pertaining to the 2014-2020 financing period are in fact still being added to the platform to this day. This makes data extracted from this portal necessarily provisional. Data for the current financing period (2021-2027) is significantly scarce at the time of writing: only four countries have reported projects under CI 083.
2. **Inaccurate geodata:** Secondly, while geodata is indicated for every project, it is often inaccurate and too distant from the actual project area to serve any purpose in locating it to assess its implementation. As reported by *Kohesio* staff, geodata might in fact indicate the legal address of the implementing agency or unprecise locations[14].
3. **Formatting inconsistencies:** Lastly, severe formatting issues and inconsistencies are present throughout the dataset. While the dataset is standardized on a formal level and the different project information is categorized in uniform columns, the content of said columns does not follow a clear format. Consequently, while the target of some projects is clear, other cases display obscure, excessively long, or incorrectly formatted descriptions that inhibit the identification of the target of the investment.

These elements have guided the development of this report's methodology, as elaborated below.

## 2.3 Problem statement and research question

This research was prompted by the necessity to identify the total share of cycling related projects within the Cohesion Fund (CF) and European Regional Development Fund (ERDF) in the 2014-2020 and 2021-2027 financing periods.

Cycling investments have been shown to appear under CIs 090, 043, 083 by previous research[15]. Until now, however, there has been no method of systematically filtering out inaccuracies in reporting and projects that do not relate to cycling, leading to potential overestimations of the EU contribution to cycling investment. The research was therefore guided by the necessity to more precisely detect the share of projects within CIs 090, 043 and 083 that are effectively targeted towards cycling.

The desired output of this research is a financial and quantitative overview of the EU contribution to cycling investment paired with concrete examples of good and bad

[14] https://kohesio.ec.europa.eu/en/faq
[15]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf

practices in the reporting system. This will provide guidance on how cycling related projects should be assessed, monitored, and reported to make the best use of EU funds and contribute to a modal shift towards more cycling.

## 2.4 Hybrid quantitative-qualitative approach

At the time of this research, the aggregate total of 090, 043 and 083 projects reported on *Kohesio* amounts to 7,713 cases. The quantity of cases inhibits manual inspection due to time limitations and increased possibility of human error. On the other hand, relying on a qualitative inspection of a randomized sample would result in an excessively limited picture of trends, figures and variability within the dataset.

To address these shortcomings, the study uses a hybrid quantitative-qualitative approach. Moreover, the approach is adopted to understand the complexity of the policy issue[16]. Firstly, an automated quantitative content analysis was performed on the entirety of the dataset to provide a replicable and all comprehensive understanding of the share of EU contribution to cycling investment present within it. Following the analysis, 16 projects are presented following a case study approach[17] to understand how the reporting system works and what are its shortcomings. The objective of this second analytical stage is to nuance the results of the quantitative analysis, evidencing intra category variability and identifying practical examples of misreporting within the dataset.

Through the combination of qualitative and quantitative methods, the research contemporarily provides aggregate figures of reported EU contribution to cycling investment and concrete best practice examples.

## 2.5 Report structure

To end this introduction, an overview of the reports structure is provided:

- Section 1 – Executive Summary: Provides an overview of the study, its objectives, and key findings.
- Section 2 – Introduction: Explains the research context, policy background, existing gaps, and the problem statement.
- Section 3 – Data and Methodology: Details the dataset, quantitative content analysis model, and qualitative case study approach.
- Section 4 – Quantitative Findings: Presents aggregate results by Category of Intervention (CI) and discusses patterns and inconsistencies.
- Section 5 – Qualitative Case Studies: Illustrates misreporting practices and best practices through selected examples.

[16]https://campusvirtual.icap.ac.cr/pluginfile.php/238228/mod_resource/content/1/8.%20Kodithuwakku%2C%20S.S.%20%282022%29.pdf
[17] https://us.sagepub.com/en-us/nam/case-study-research-and-applications/book250150

- Section 6 – Discussion: Analyses causes and consequences of misreporting and identifies common investment framing.
- Section 7 – Conclusions and Policy Recommendations: Summarizes findings and proposes measures to improve reporting accuracy.
- Section 8 – Limitations and Further Research: Outlines the constraints of this study and suggests future research directions.

# 3. Data and methodology

This chapter is organized into two parts: Section 3.1 outlines the quantitative methodology, and Section 3.2 presents the qualitative methodology.

## 3.1 Quantitative content analysis

The quantitative content analysis was developed in three stages:

1. Data extraction
2. Content analysis
3. Extraction of EU contribution investment figures

To address the shortcomings of the dataset (frequent updates and inconsistent reporting) this first element of the study was designed as a replicable and amendable automatic model. The codebook and the entirety of python scripts are included as an annex of this report. The name of the scripts is used throughout the report for reference. More information on the model is available at the end of this section and in the user guide provided as an annex.

### 3.1.1 Data extraction

2014-2020 and 2021-2027 financing periods *Kohesio* data was downloaded from the "latest" folder at the time of the study (October 2025). On *Kohesio*, member state specific datasets are available in both *.csv* and *.xlsx* formats. The Excel format was selected due to its support of UTF-8 encoding.

Following their download, datasets were filtered through "extract_code_from_excel.py", producing aggregate exports of exclusive 090 and 043 CI files for the 2014-2020 financing period; and one CI 083 export for the 2021-2027 financing period. The three files are the raw data for the content analysis.

### 3.1.2 Content analysis

The content analysis was performed running the output files through *classify_cycling.py*. This script scored the projects by reading each reported project (excel rows) scanning its tile and project description in both English and national languages. This information is reported under columns: *Operation_Name_English; Operation_Name_Programme_Language; Operation_Summary_English; Operation_Summary_Programme_Language*.

"classify_cycling.py" relies on keyword detection, outputting different Cycling Scores based on the detected keyword combinations. The scoring system is described in greater detail below.

### 3.1.3 Cycling Scores (CS)

The scoring logic is based on a five-point non-hierarchical scale with the following values:

0. Indicates projects where neither cycling nor pedestrian investments are reported.
1. Indicates projects where pedestrian and potentially other investments are reported.
2. Indicates projects where cycling and other investments are contemporarily reported.
3. Indicates projects where pedestrian, cycling and potentially other investments are contemporarily reported.
4. Indicates projects where only cycling investments are reported.

Importantly, the scoring logic relies on detection alone. Consequently, when the model lacks a specific term in its vocabulary, the term will not be detected leading to potential errors. Based on the scoring system, only investments figuring in categories 2,3 and 4 can be said to be related to cycling.

### 3.1.4 Codebook

The scoring is based on a codebook (Annex 1) presenting four keyword categories to which the following tags are applied:

- ***Cycling*****:** keywords referring exclusively to cycling infrastructure, policy and concepts.
- ***Ped_only*****:** keywords exclusively referring to pedestrian infrastructure, policy and concepts.
- ***Ped_cycle*****:** keywords referring to typically pedestrian and cycling hybrid infrastructure, policy and concepts.
- ***Other*****:** keywords referring to other infrastructure that does not relate to cycling or pedestrian elements but was found to consistently appear in the dataset.

The following combination of keywords generates the different Cycling Scores.

*Table 1. Cycling Score key where "x" reads as "any other keyword category"*

| Cycling Score | Combination | Alternative combination |
|---|---|---|
| 0 | no keyword | Other |
| 1 | ped_only | ped_only + other |
| 2 | cycling + other | |
| 3 | ped_cycle + x | ped_only +cycling + x |
| 4 | cycling | |

The codebook was developed both deductively and inductively, combining Open Street Map (OSM) tags with colloquial, project and policy specific terms gathered from repeated manual overviews of the dataset.

### 3.1.5 Logics

In combination with the codebook, three logics were used to curb formatting patterns that negatively impact the reliability of the Cycling Score output. These logics were kept as straightforward and rooted in keyword detection as possible, in order not to impact the replicability of the model.

1. The first logic discriminates against an overinflation of *ped_only* and *other* keywords that are often labelled in negative or passive terms but impact the scoring output. This logic ignores *ped_only* or *other* terms where a negative or passive word appears within a three-word radius from them. Negation or passive words can be found and edited in the opening section of the python.
   The decision not to apply the logic to *cycling* and *ped_cycle* terms, as the compiling of the codebook itself, derives from manual observation of the dataset and pattern identification within it.

   A hypothetical example is: “development of a cycling route in proximity of a sidewalk”. Here “sidewalk” was counted as keyword while being already there at the time of construction and not being thus part of the investment. Thanks to the logic of exclusion, its adjacency to the word “proximity” leads it to being excluded thus not impacting the scoring.

2. A second logic of exclusion follows from a misreporting pattern identified within the 083 CI dataset. Czechia has been found to consistently list the sentence “roads for pedestrians or roads for cyclists” in CI 083 project descriptions. Observation revealed this erroneously assigned a Cycling Score of 3 to unrelated infrastructure as the construction of bus stops. A logic has thus been implemented to ignore that exact combination of words, maintaining the validity of other terms in the description.

3. Thirdly, a logic was implemented for the recognition of generic terms. These terms are “trail”, “path”, “track” and their plural forms. Oftentimes these are used in the dataset to indicate pedestrian and cycling infrastructure, however they are also sometimes used to indicate other infrastructure (as in “tram tracks”). Ignoring them would lead to severe underestimation of cycling investment, while including them would lead to erroneously categorising unrelated projects as targeted to cycling. A logic was thus introduced to consider these terms as *ped_cycle* keywords when presented as the only word in the project description and ignore them when they appear with other keywords. This avoids underestimation of cycling infrastructure, while not interfering with the Cycling Score of clearly categorised cases.

### 3.1.6 Reliability

To test the reliability of the model, Cohen's Kappa was measured by comparing scores given by the model with manually assigned scores on a statistically relevant stratified sample of 310 cases. The sample size was determined by an expected agreement of 70% (derived from previous tests), a 5% margin of error and 95% confidence interval. Manual scores were assigned strictly based on the content of the project description and no space was left to inference. This resulted in the following Cohen Kappa scores:

- Unweighted: 92.6%
- Weighted: 94.7%

While the unweighted kappa is obtained by considering disagreements as equal regardless of the CIs involved, the weighted coefficient estimates larger disagreements have a higher impact. The total number of disagreements was 18 out of 310 for this random sample.

The confusion matrix is presented below. This table compares automatically and manually assigned Cycling Scores, indicating numbers of agreement and disagreement.

*Table 2 – Confusion matrix: illustrates the agreement and disagreement between manually and automatically assigned Cycling Scores.*

| Manual/auto | **0** | **1** | **2** | **3** | **4** |
|---|---|---|---|---|---|
| **0** | 108 | 1 | 0 | 2 | 0 |
| **1** | 1 | 36 | 0 | 1 | 0 |
| **2** | 0 | 0 | 17 | 0 | 3 |
| **3** | 3 | 3 | 1 | 85 | 2 |
| **4** | 0 | 0 | 1 | 0 | 47 |

### 3.1.7 Model limitations

The quantitative analysis provides valuable quantitative and financial information on the totality of project. However classical content analysis bargains replicability and transparency for a potential for inaccuracies. This is particularly true for relatively heterogenous data as project descriptions reported on *Kohesio*. If keywords are not mentioned in the codebook, errors of over or under inflation might occur. To illustrate such occurrence, refer to the following hypothetical example:

> Project description: "A new sport facility is being built, lighting is renovated in the area and bike racks are provided for the new users"
>
> Keywords absent in the codebook under *other* category: "sport facility", "lighting"
>
> *Keyword detected: "*bike racks*" = cycling*
>
> Score: 4

In this case, the model overestimates the cycling element: the only word present in the codebook is cycling related and the model scores a project minimally targeted to cycling as fully cycling oriented.

Second, the model can be subject to errors triggered by misreporting. The introduction of standardized forms that do not relate to the specific projects within their description can generate inaccurate Cycling Scores. To illustrate such occurrence, refer to the following hypothetical example:

> Project description: “Construction of a bus stop in the municipality of x, this project involved the construction of roads for pedestrians and roads for cyclists”
>
> In this case, the model would detect the following keyword combination: *other* (=bus) + *ped_only* (=pedestrians) + *cycling* (=cyclists) leading to a Cycling Score of 3
>
> This specific error has been curbed with the introduction of logic n.2 as explained above.

Third, excessively long descriptions might lead to detection of *other* keywords that are not related to the project itself. This happens in cases where, for example, a cycling infrastructure is described as part of a wider SUMP that also includes the construction of bus stops (not part of the specific project). Lacking the capacity of understanding contextual information, the model will automatically assign a Cycling Score = 2.

Fourth, the model works on a rigid content analysis logic. This means it fully relies on the codebook provided by the researcher and cannot detect keywords that are misspelled or absent in its vocabulary. This constitutes a major limitation in identifying cycling projects that are reported with their specific policy name of in national language declinations. We recognise this is the major cause of underestimation of cycling project by this model.

To curb these inaccuracies, the model was refined in two steps. Firstly, the codebook was inductively tuned to common words present in the dataset. Secondly, the exclusion logics mentioned above were implemented. The model is designed to be editable to adapt it to new misreporting patterns that might emerge in future *Kohesio* data submissions.

### 3.1.8 Financial information extraction

Investment information was extracted though the python script *financials.py*. This calculates the EU contribution dedicated to every cycling score by factoring in the contribution figure when reported and the total investment figure when not reported. The latter situation is motivated by the fact that the lack of indication of EU contribution in the dedicated column signifies the totality of the investment has been covered by EU funds.

### 3.1.9 Why the model?

The development of the automated model resulted from the identification of inconsistent reporting within *Kohesio*. Due to the likelihood for error, developing a large-scale analysis of data without offering the possibility to inspect or replicate it would have generated time dependent and non-transparent results.

Firstly, we developed this report to be interactive and refinable. The analysis that generated its results can be fine-tuned and replicated through time as new patterns emerge in the dataset and as *Kohesio* reporting gets more precise and standardised. This allows both ECF and the readers of this report to gather up to date quantitative information at any point in time and at every stage of *Kohesio*'s development.

Secondly, the development of this model targets transparency. Limitations are recognised, and the entire research process is made available for feedback and amelioration. With the publication of this model, we aim to open a discussion on reporting of cycling investments that we hope will lead to better assessment, implementation and reporting practices.

The entire analysis is based on open-source software, all of which can be downloaded from the zip folder included with this report or by following the link to the developer's software. Data is primarily managed through python scripts, that can be operated in Anaconda PowerShell prompt by following the guide included in the annex folder. The codebook, based on which Cycling Scores are assigned, is formatted as a simple *.csv* file to which terms can be added through excel or notepad.

## 3.2 Case study

While the quantitative approach provides an overview of projects and their target, a qualitative approach was adopted to show inaccuracies, grey zones and misrepresentations in the dataset. This approach complements the qualitative overview, nuancing the findings and evidencing intra category variability.

The case study approach is endorsed by Yin (2018)[18] and Kodithuwakku (2021)[19] to capture the nuance that is lost in purely quantitative studies, answering the "how" and "why" questions that are often neglected. Moreover, a case study approach allows to delve into the temporal element of these projects (Yin, 2018, p.331) allowing to verify whether what is reported in *Kohesio* effectively took place or not, and if so in what modalities.

We recognise a qualitative overview of a small sample from a 7713-case population is bound to give partial insight. We therefore recognise that the cases presented in the qualitative findings do not represent the entirety of intra-CI or intra Cycling Scores variability. However, cases analysed in this report provide insight on why discrepancies exist between reported and implemented cycling investment, along with best practice examples and other practical insights on the reporting system.

[18] https://uk.sagepub.com/en-gb/eur/case-study-research-and-applications/book250150
[19]https://campusvirtual.icap.ac.cr/pluginfile.php/238228/mod_resource/content/1/8.%20Kodithuwakku%2C%20S.S.%20%282022%29.pdf

All data regarding this section is available as an annex to this report. From there, the reader can access sources for every case and the QualCoder project containing coded data.

### 3.2.1 Data extraction

Data used for the purpose of this study is made available in the “case study manual overview” folder within the annex, divided into categories. To aid in autonomous examination, the main logics guiding categorization are listed below:

Before every file type (x_y) where x=Cycling Score (0;1;2;3;4) and y=case number

- doc – official document or translation (see below)
- *kohesio* – *kohesio* portal project title and description
- map – aerial map
- news – text coming from news sources
- img – image gained from official project webpage, managing authority or news
- street – image gained from Streetview
- text – other text files, government communications etc.
- video – video links
- osm – OpenStreetMap data

The subject of the file and date is mentioned after the file when needed.

eg. (1_1)street_calle_carmen_feb_2024

Links are not directly used for the analysis, but they are stored for reliability purposes in a separate text file named (x_y)links

When possible, the documents were used as source in their original form. When needed, a translation python script  was used to read official pdf files and obtain translations. The script uses a combination of google translate and tesseract OCR. OSM data was extracted and mapped in QGIS through the QuickOSM plugin.

### 3.2.2 Case sampling

A purposive sample of 16 cases was selected. The sample was based on source accessibility: projects that involved major, easily verifiable and complete interventions were preferred. The triangulation served to assess the state, quality and utility of projects with the ultimate objective of assigning a more precise score in accordance with ECF’s conceptual framework. Contemporarily, the qualitative approach contributed to a deeper illustration and nuance of the scoring scale and the *Kohesio* dataset itself.

The following case count relates to the Cycling Scores:

- Cycling Score 0: 4 cases
- Cycling Score 1: 4 cases

- Cycling Score 2: 2 cases
- Cycling Score 3: 3 cases
- Cycling Score 4: 3 cases

### 3.2.3 Qualitative analysis

The qualitative analysis was performed on QualCoder. Files were grouped into cases and manually coded. As the establishment of theoretical understandings of cycling reporting transcends the objective of this research, the focus was narrowed on the presence or absence of cycling infrastructure. Findings from data triangulation were then compared to the project description reported in *Kohesio* and the Cycling Score resulting from it. Conclusions were drawn from their convergence or divergence.

# 4. Findings – Quantitative analysis

This section presents the findings from the quantitative content analysis of the *Kohesio* dataset. A total of 7,713 projects has been surveyed, amounting to a budget of approximately € 20.7bn Euros from the ERDF and CF divided as follows

- CI 090: € 3.5 bn
- CI 043: € 16.1 bn
- CI 083: € 1.1 bn

Total projects: 7,713
Total EU contribution in the CIs: € 20.7bn

The section is divided in two clusters. First, results for every CI are presented and briefly overviewed. For every CI "outliers", or countries that do not follow the ideal conditions set by the CI nomenclature, are identified. Rules for this identification depend on the nomenclature itself and are openly stated in each subsection. Second, the results are discussed individually and aggregately.

## 4.1 Results presentation by CI

This subsection contains quantitative findings by Category of Intervention. These do not cover all EU member states, as some did not report projects under 090, 043 or 083 CIs.

### 4.1.1 CI 090 – cycle tracks and footpaths. (2014-2020)

CI 090 is the key CI covering cycling investment during the 2014-2020 financing period. As of October 2025, 3,065 projects were reported under this category, amounting to an EU contribution to cycling investment of € 3.5bn.

Our analysis reveals that 2,324 projects were related to cycling, amounting to an EU contribution of € 2.6 bn, or 73.7% of the total figure. This estimate remains conservative as, recognising the limitations of the model, we have calculated these figures by accounting for the sum of Cycling Scores 2, 3 and 4. An exclusive consideration of score 4 leaves us with a significantly lower figure: of € 0.66bn.

Below, Cycling Scores are informed by their project counts, percentage relative to the total project count, average and total EU contribution figures:

*Table 3 - 090 project count*

| Cycling Score (CS) | project count | percentage | Average EU contribution | total EU contribution |
|---|---|---|---|---|
| 0 (neither cycling nor pedestrian investments are reported) | 333 | 10.9% | 2,004,627 € | 667,540,844 € |
| 1 (pedestrian and potentially other investments are reported) | 408 | 13.3% | 651,557 € | 265,835,416 € |
| 2 (cycling and other investments are contemporarily reported) | 175 | 5.7% | 1,833,831 € | 320,920,448 € |

| | | | | |
|---|---|---|---|---|
| 3 (pedestrian, cycling and potentially other investments are contemporarily reported) | 1403 | 45.8% | 1,164,124 € | 1,633,266,212 € |
| 4 (only cycling investments are reported) | 746 | 24.3% | 881,291 € | 657,443,800 € |

Among countries that reported projects under CI 090, we identified 5 as being outliers. In this CI outliers correspond to countries whose share of Cycling Score 0 (CS0) is equal to or higher than 20%.

*Table 4 – CI 090 outliers by share of projects*

| **Country** | **Share of CS0 projects relative to the country's total projects** |
|---|---|
| Lithuania | 100% |
| Romania | 34% |
| Greece | 32% |
| Bulgaria | 24% |
| Portugal | 21% |

However, the ranking differs when considering the absolute number of projects reported by each member states under CI 090 to which Cycling Score 0 was assigned. This statistic, presented below, provides a better idea of the investment dedicated to projects that do not relate to the CI.

*Table 5 – CI 090 outliers by project count*

| Country | Project count | % relative to total project count |
|---|---|---|
| Portugal | 134 | 4.4% |
| Romania | 84 | 2.7% |
| Spain | 26 | 0.8% |
| Italy | 25 | 0.8% |
| Slovenia | 18 | 0.6% |

Below, the main reasons for the obtainment of Cycling Score 0 for each outlier are listed:

- **Bulgaria and Romania:** reporting of multi-CI projects that do not explicitly mention cycling or pedestrian infrastructure.
- **Greece:** vague and often unrelated projects; a prevalence of "redevelopment" efforts that likely target cyclists or pedestrians (as measures to increase quality of life) but do not explicitly state this. Few projects are oriented towards mobility, with most investments targeted at historic and touristic purposes.
- **Lithuania:** only three projects are reported under CI 090. These target the development and preservation of natural and touristic sites. None is explicitly targeted at mobility or mentions cycle tracks or footpaths, although the latter are likely present as a minor part of the investment.

- **Portugal:** vague project descriptions, unrelated projects, and formatting errors contribute to the high count of CS0. Urban regeneration is frequently mentioned, but no explicit reference is made to pedestrian or cyclist traffic. Moreover, a high number of car parks, public transport facilities, and aesthetic urban renewals are reported under CI 090.
- **Italy:** CS0 is assigned because of the use of special characters leading to formatting problems and unreadability; redevelopment projects that do not explicitly mention their target; projects targeting environmental preservation and touristic promotion; projects focused on the restoration of historic buildings and areas.
- **Spain:** lower presence of truly unrelated projects, as most projects assigned a score of 0 derive from incomplete or incorrect translations; sustainable urban mobility plans and redevelopment projects with no information on specific targets.
- **Slovenia:** terms are often not translated; traffic surface rearrangements and SUMPs with no mention of the target.

Due to this CI being the most relevant and complete in the dataset, a map is provided below for accurate visualization of the spread of related and unrelated projects. In the map, projects that obtained a CS0 are coded in red, while project obtaining any other CS are coded in green.


*Figure 1 - 090 outlier map. Every red dot corresponds to one CS0 project*

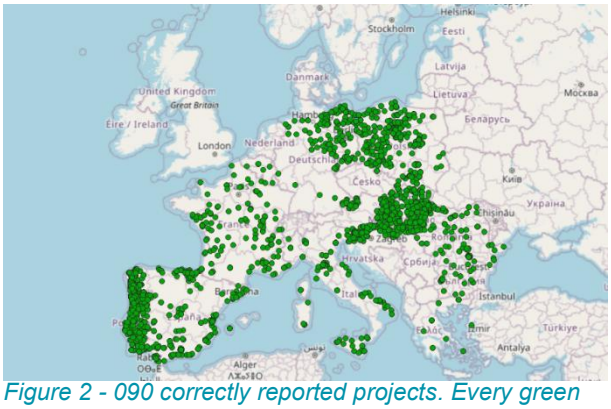


*Figure 2 - 090 correctly reported projects. Every green dot corresponds to one CS 1,2,3,4 project.*

### 4.1.2 CI 043 - clean urban transport infrastructure (including equipment and rolling stock). (2014-2020)

The nomenclature of CI 043 does not explicitly mention cycling investment, that is generally better reported under CI 090. Most projects covered by this CI include the purchase of modern public transport rolling stock, the development of intermodal parks and other multimodal infrastructure. However, cycling can be a (sometimes significant) component of these projects. Moreover, previous research by ECF has shown that

exclusively cycling investment (primarily reported by Croatia and Czech Republic) exists within this CI[20].

Our analysis concluded that of the 3,713 projects reported under this CI, 1,273 were partially or fully targeted to cycling (sum of CS 2,3 and 4). Among these, 218 projects were uniquely targeted to cycling (CS 4). The first cluster totalized a € 3.4bn EU contribution to cycling investment (21.1% of the total figure), while the latter absorbed € 0.16bn. While the relative share of EU contribution is lower, the total financial figures for Cycling Scores 3,4 and 5 are greater than under CI 090.

Below Cycling Scores are informed by their project counts, percentage relative to the total project count, average and total EU contribution figures:

*Table 6 - 043 Aggregate figures*

| Cycling Score (CS) | project count | percentage | average EU contribution | total EU contribution |
|---|---|---|---|---|
| 0 (neither cycling nor pedestrian investments are reported) | 2218 | 59.7% | 5,284,643 € | 11,721,338,398 € |
| 1 (pedestrian and potentially other investments are reported) | 222 | 6% | 4,442,813 € | 986,304,688 € |
| 2 (cycling and other investments are contemporarily reported) | 316 | 8.5% | 4,247,585 € | 1,342,237,017 € |
| 3 (pedestrian, cycling and potentially other investments are contemporarily reported) | 740 | 19.9% | 2,552,997 € | 1,889,218,146 € |
| 4 (only cycling investments are reported) | 217 | 5.8% | 727,899 € | 157,954,231 € |

Due to the nature of the CI, outliers are hereby evaluated differently. The threshold is reduced to 10%, and CS4 is factored in to understand which countries prevalently used 043 to report cycling investments. Due to the possible presence of other investments within CS3, the Cycling Score is not used to formulate these statistics.

*Table 7 – CI 043 outliers by share of projects*

| Country | Share of CS4 projects relative to the country's total projects |
|---|---|
| Belgium | 44% |
| Greece | 22% |
| Italy | 16% |
| France | 13% |

When considering project count, Italy has reported the highest number of exclusively cycling projects under CI 043, followed by France, Portugal and Czechia.

[20]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf

*Table 8 – CI 043 outliers by project count*

| Country | Project count | % relative to total project count |
|---|---|---|
| Italy | 47 | 1.3% |
| France | 36 | 1% |
| Portugal | 23 | 0.6% |
| Czechia | 17 | 0.5% |

The main cycling exclusive projects reported by these countries are reported below:

- **Belgium:** cycle bridges, cycle highways, cycling trails, cycle lanes, and cycling-friendly policy initiatives.
- **Italy:** bike sharing, bicycle amenities and bike paths.
- **Portugal:** bike-sharing initiatives (U-Bike and others), the introduction of cycling within existing intermodal contexts, and bike tracks, paths, and corridors.
- **Slovenia:** bike rental and sharing systems, bicycle amenities, and cycle paths.
- **France:** bike sharing, bicycle amenities, cycle paths, and interventions along the EuroVelo route.
- **Spain:** cycling promotion initiatives, bicycle amenities, bike sharing, and bicycle paths.

Moreover, a significant number of reported projects were assigned Cycling Score 3, including 180 projects from Poland, 94 from Romania, and 88 from Czechia. Nonetheless, these projects are in part composed by intermodal hubs and SUMPs that mention both pedestrian and cycling elements, making them consistent with the CI's nomenclature.

### 4.1.3 CI 083 – cycling Infrastructure. (2021-2027)

CI 083 has been introduced in the 2021-2027 financing period. At the time of this research, projects are still in the initial stages of being reported on *Kohesio*. Only four member states have in fact submitted projects under CI 083: Czechia, France, Poland and Romania. Moreover, a share of these projects has been planned but not implemented yet.

935 projects are currently reported under CI 083, of which 462 relate to cycling. For the time being, CI 083 contains a € 0.8bn (72.2%) in EU contribution to cycling related investment of which at least € 0.16bn is exclusively related to cycling.

Below Cycling Scores are informed by their project counts, percentage relative to the total project count, average and total investment figures:

*Table 9 - 083 project count*

| Cycling Score (CS) | project count | percentage | average EU contribution | total EU contribution |
|---|---|---|---|---|
| 0 (neither cycling nor pedestrian investments are reported) | 196 | 21% | 1,205,874 € | 236,351,463 € |

| | | | | |
|---|---|---|---|---|
| 1 (pedestrian and potentially other investments are reported) | 277 | 29.6% | 224,664 € | 62,231,969 € |
| 2 (cycling and other investments are contemporarily reported) | 22 | 2.4% | 9,343,408 € | 205,554,986 € |
| 3 (pedestrian, cycling and potentially other investments are contemporarily reported) | 224 | 24% | 1,834,655 € | 410,962,922 € |
| 4 (only cycling investments are reported) | 216 | 23.1% | 749,005 € | 161,785,140 € |

Within this category, outliers are calculated by verifying whether the sum of projects obtaining a Cycling Score of 0,1,2 and 3 cover a singificant share of the total projects reported by each member state. The stricter categorisation derives from the narrower nomenclature assigned to the CI.

*Table 10 – CI 083 outliers by share of projects*

| **Country** | **Share of (CS 0;1;2;3) projects relative to the country's total projects** |
|---|---|
| Romania | 94% |
| Poland | 81% |
| Czechia | 75% |
| France | 69% |

When considering project count figures, Czechia ranks highest overall.

*Table 11 – CI 083 outliers by project count*

| **Country** | **Project count (CS 0;1;2;3)** | **% relative to total project count** |
|---|---|---|
| Czechia | 533 | 57% |
| Poland | 92 | 9.8% |
| Romania | 60 | 6.4% |
| France | 34 | 3.6% |

Within this CI, projects scoring 0 mainly consist of "pavement" reconstructions or projects not explicitly mentioning cycling or pedestrian infrastructure. The first term should be flagged as a pedestrian term however, due to detected misuses of the term to indicate other street surfaces, it has not been included in the codebook. Other projects scoring 0 include the construction of bus stops[21], vague project descriptions indicating a desire to reduce carbon emissions[22] and multi-CI projects[23]. Score 2 is primarily populated by multi-CI projects and cycling exclusive projects whose descriptions excessively contextualise the infrastructure. Lastly, we observe that exclusively pedestrian and

[21] https://linkedopendata.eu/entity/Q7414741
[22] https://linkedopendata.eu/entity/Q7419062
[23] https://linkedopendata.eu/entity/Q7420049

pedestrian-cycling projects resembling those that were before reported under 090 are now reported under this CI.

## 4.2 Discussion

Within this section, data presented above is discussed, patterns are identified and potential explanations are given to the divergence between what is reported and what has been detected by the model. We open this section with three distinct discussions of each CI result and end it with a brief identification of trends.

### 4.2.1 CI 090 – Results discussion

During the 2014-2020 financing period, a single category was used to indicate both cycling and pedestrian oriented investments. This CI, coded as 090, has the assigned nomenclature of “cycle tracks and footpaths”. However, a substantial number of projects that do not relate to this infrastructure type have been reported under it. In section 5 *Qualitative findings,* we will discuss how the CI contains a set of cycling and pedestrian projects that are **not** cycle tracks or footpaths but instead ancillaries as road decorations, greenery and recreational areas. More alarmingly, this section revealed that 333 project descriptions did not contain terms related to cycling or walking.

The presence of non-related investments within CI 090 creates a disparity between the predicted and effective EU contribution to cycling investments corresponding to roughly € 930,000,000.

CYCLING INVESTMENT OVERESTIMATION = CS0 + CS1 = € 930,000,000

As elaborated in the following section through case studies, this figure is the product of broad sustainable urban mobility projects and completely unrelated projects listed under the CI.

### 4.2.2 CI 043 – Results discussion

As previously mentioned, CI 043 does not exclusively target cycling investment, so it is evident that most projects in this category are unrelated. However, while in relative terms cycling investment bears little relevance within this CI, it becomes significant when comparing its absolute number to that of CI 090 investments. CI 043 EU contribution to cycling related investments (CS 2, 3 and 4) is in fact € 0.8bn greater than that reported under CI 090, albeit it remains lower when considering exclusively cycling oriented (CS4) projects.

The disparity between exclusively cycling (CS4) and partially cycling (CS 2;3;4) oriented investment is likely caused by the considerable presence of large infrastructure projects that are partially oriented to cycling as SUMPs, urban renewals and intermodal parks. These projects, as shown in the case study section, necessarily absorb higher investments as they are more complex and larger. Nonetheless, these projects remain significant as they contribute to cycling mobility and promoting bicycles as a means of transport.

Lastly, the presence of cycling exclusive projects (CS4 = 217 projects) within this CI confirms previous findings[24] and introduces the possibility of finding cycling investment in other CIs. The creation of bicycle amenities, bike sharing initiatives and general promotion of cycling as a means of transport does not clash with the nomenclature of 043. If anything, it proves that countries reporting these projects under CI 043 value cycling as a relevant form of sustainable urban mobility. However, the presence of cycle tracks and interventions on the EuroVelo[25] routes under this category constitute an instance of clear misreporting due to the presence of CI 090. This evidently does not favour transparency, as the CI description seems not to match its contents.

### 4.2.3 CI 083 – Results discussion

CI 083 was introduced to indicate "cycling infrastructure" investments within the current (2021-2027) financing period. The new nomenclature broadens the infrastructure types considered by the CI, while contemporarily removing the pedestrian element from them. Data on this CI remains scarce at the time of research, as only four countries (Czechia; France; Poland and Romania) have reported 083 projects. EU contribution to investments in cycling related projects as a share within the CI seems to remain stable (72.2%) however data is currently insufficient to produce reliable EU contribution estimates.

One evident trend identified in this CI is its inconsistency. While the CI has been formally polished and targeted exclusively to cycling, member states continue reporting pedestrian targeted projects under it. In relative terms, the number of exclusively pedestrian projects within the CI has increased: from 13.3% of 090, to 29.6% of the 083 EU contribution share. The fact that all four states are counted as outliers in their reporting of CI 083 projects reinforces the argument for CI inconsistency.

The number of CS 3 is motivated by a combination of the nature of cycling infrastructure and the level of detail with which it is being reported under the current financing period. As explored in the following section, exclusively cycling projects are hard to come by, as they often include pedestrian oriented ancillary investment or extend access to pedestrians. Consequently, highly detailed project descriptions often include pedestrian keywords leading to a Cycling Score of 3. However, this CI also includes openly hybrid pedestrian–cycle projects. Due to the lack of alternative CIs to classify such projects, category 083 becomes diluted by projects that do not align with its intended nomenclature. This remains true for CS1: due to the removal of the pedestrian element from 083 and the lack of a pedestrian exclusive CI member states have been reporting exclusively pedestrian projects under the cycling exclusive CI.

Lastly, data regarding Czechia must be nuanced in relation to the model. Czechia has adopted a peculiar reporting structure for 2021-2027, where a standard claim is repeated throughout the dataset in different sentence variations. This claim declares that the project in question is related to the "construction and renovation of roads for pedestrians

[24]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf
[25] https://linkedopendata.eu/entity/Q6839515

and roads for cyclists". However, in some cases it is related to projects that do not involve such activities, as the construction of bus stops. This created the necessity to include a logic of exclusion for the word combination: "roads for pedestrians or roads for cyclists". While this leads to a potential underestimation of cycling oriented projects, it avoided counting larger nonrelated projects that have the effect of inflating the EU contribution figures. Secondly, because the term "pavement" is used inconsistently throughout the dataset—sometimes referring to its correct meaning as a pedestrian-dedicated surface, and at other times to a vehicle road surface—it has been excluded from the codebook. Consequently, projects exclusively mentioning the development of a pavement (widespread in Czechia's dataset) are not recognized as pedestrian or cycling. While we did not include the term in the codebook, we recognize that the number of pedestrian oriented projects is likely substantially greater than estimated by the model.

### 4.2.4 Multi-CI projects

As part of the analysis, the entire dataset has been queried for the presence projects listed under multiple CIs. This consisted of a simple character query of "|",
the symbol used across the dataset to separate CIs. Every cell containing one or more occurrences of the symbol has been counted as one case of multi-CI reporting, yielding the following results:

*Table 12 – Multi-CI projects by country*

| Country | Number of multi-CI projects |
|---|---|
| Romania | 435 |
| Italy | 57 |
| Bulgaria | 46 |
| Greece | 7 |
| Croatia | 2 |
| Lithuania | 2 |
| Latvia | 1 |
| Slovenia | 1 |

While we recognize reporting a project under multiple categories contributes to greater reporting accuracy, it can lead to severe budget inflation. This is because multi-CI projects tend to tackle a wider array of activities, leading to greater absorbed investments. Of the top twenty projects with the greatest budget in CI 090, 18 are in fact multi-CI developments. Among the top twenty, only the 8$^{th}$ and 14$^{th}$ ranked projects are reported exclusively under CI 090. The trend is replicated in the current financing period's CI for cycling investment 083. Under 083, only the 3$^{rd}$ and 16$^{th}$ projects are in fact exclusively reported under the CI, while others are also paired with CIs dedicated to sustainable mobility rolling stock, the renovation of streets and other.This does not translate into CI 043, where all the 20 projects absorbing the greater EU contributions are uniquely reported under the CI. This is likely a consequence of CI 043 accommodating more complex and expensive projects under its nomenclature, as the purchase of rolling stock and the broad objective of "clean urban transport", that can host the development of tram and metro lines under its umbrella.

## 4.3 Conclusion – Quantitative results discussion

The qualitative analysis of the dataset retrieved from *Kohesio* shows how the cycling component is scattered in different shares across CIs 090, 043 and 083. In their totality, **cycling related projects amount to 4,059, absorbing approximately €6.8 bn in EU contributions**.

While the figures presented in this section are not definitive due to research limitations, they can be confidently used to sustain that **not all potential cycling investment translates into effective cycling investment**. This does not equate to saying that reported cycling investment differs from effective one, but that **the current reporting format does not allow for the precise estimation of the share of Structural Funds dedicated to cycling alone.** If financial figures were calculated by relying on CIs alone, the following number of unrelated or pedestrian exclusive projects would be erroneously considered as cycling projects:

- CI 090: 741
- CI 043: 2,440
- CI 083: 473
- Total: 3,654
- Potential over estimation: €13.9 bn

By “potential overestimation” we refer to the overestimation to which an analysis purely rooted in CIs for data extraction would be subjected to. While some projects obtaining Cycling Score 0 might have had some positive repercussion on cycling or walking, it is impossible to verify due to their lack of mention of cycling and walking in their project description.

The relevant shares of non-cycling and non-pedestrian projects detected in CIs 090; of cycling projects detected within CI 043; and of non-cycling projects detected in CI 083; proves that **CIs do not consistently relate to their content**. This questions the transparency of the reporting system, reinforcing the conclusion **that it is not possible to extract definitive EU contribution to investment data from these figures as the CI nomenclature does not always match the CI conten**t. Due to the more rigid nomenclature of CI 083, this **trend appears to be increasing in the current financing period**.

Non-cycling projects (CS0) are the largest EU contribution recipients of the 2014-2020 financing period CI sample. This means that even if lower in number, these projects have the greater impact on the potential inflation of financial estimates for EU contribution to cycling investments. Nonetheless, it is important to note that this figure is skewed by the inclusion of 043 in the calculation, which legitimately contains large projects that do not relate to cycling under its umbrella. On a positive note, this trend seems to have ceased during the current financing period, where the average EU contribution figure of projects receiving Cycling Score 0 is not the highest anymore but remains significant.

An analysis of average EU contribution size shows that Cycling Scores 1, 2 and 3 tend to correspond to higher figures than those with CS 4. This is because CS 4 represents the most refined cycling category in this study, the only one that excludes projects tagged as *other* in the codebook. A brief review of the data, supported by the case studies below, indicates that projects combining at least two components (*pedestrian, cycling* and *other*) are typically associated with the development of SUMPs or interventions focused on multimodality. These projects often have greater budgets because they cover multiple dimensions such as road renovations, parking facilities and public transport infrastructure. In some cases, pedestrian and cycling infrastructure is only an ancillary element within a much broader project, that further amplifies the apparent cycling budget. Since the model cannot capture contextual details, these projects are included in EU contribution calculations despite their limited relevance to cycling or pedestrian mobility.

Multi CI projects work in a similar way, inflating the cycling CI budget estimates with elements that belong to other CIs. Since there is no indication of what percentage of the EU contribution is allocated to each CI under which the project is reported, the entire figure must be factored in when estimating it, thus inflating its figure.

Lastly, we have identified that the distribution of misreporting is not uniform: some countries have been found to erroneously report more projects in both relative and absolute terms. However, due to the different nature of CIs and consequent rules for establishing outliers, we do not retain it is relevant to present an aggregate outlier list. We thus suggest scrutinizing the relevant section above.

In conclusion, this overview proves that CIs cannot be used as the only metric for calculating cycling investment in the EU. Through its results, we estimate a €13.9 bn difference between potential (derived from the sum of CI budgets) and effective EU contribution to cycling investment (derived from the content analysis). Moreover, the presence of multimodal projects, SUMPs and multi-CI projects likely inflate estimates due to their higher average EU contribution size relative to exclusively cycling projects. (CS4). While some misreporting practices have been identified in this section, we recognise these might not be straightforward to a reader approaching the topic for the first time. Consequently, we have developed the following sections to make our Cycling Scores speak, illustrating some examples of projects that fall under them.

# 5. Findings – Qualitative case studies

While Cycling Scores provide a general overview of the state of cycling infrastructure investments, a picture based on short textual descriptions is bound to be incomplete. This section presents a purposely selected sample of projects that illustrate misuse and inadequacies of Categories of Intervention 090, 043 and 083.

This section serves multiple purposes. Firstly, it nuances our Cycling Scores by illustrating intra score differences and what do they originate from. Secondly, it points to best practices to investment reporting by illustrating ideal project description formats. Thirdly, it serves as a guide for the European citizen that might want to investigate the *Kohesio* database illustrating example of intra CI and intra CS variability and identifying misreporting patterns.

The section opens with an overview of a selection of cases for every Cycling Score. Cases have been selected based on information availability and their relation to the Cycling Scores. Every case study covers project specific information derived from a triangulation of relevant sources and a brief discussion their relation to the Cycling Scores. When possible, project descriptions reported on *Kohesio* are presented and analysed in full. If too extensive, they are broken down in their main components. The section closes with a broader discussion of the findings.

A map of the case studies analysed in this section is presented below. All geodata is derived from *Kohesio*, except for case (3_1) for which geodata was not reported and has thus been inferred from other sources.

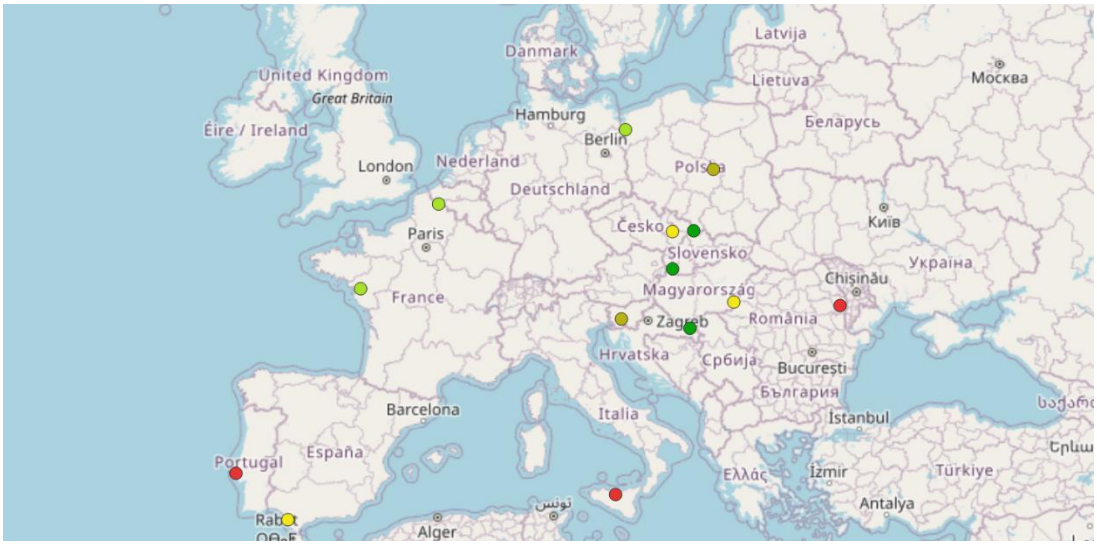


*Figure 3 - Map of presented cases. CS0; CS1; CS2; CS3; CS4*

## 5.1 Cycling Score 0

Our quantitative analysis assigned Cycling Score 0 to 2,747 projects across the three CIs. As previously stated, this score is assigned to projects that contained no pedestrian or cycling related keyword within the reported project description. We observe reasons to obtain this score to fall under two categories: irrelevance and inadequate reporting. To illustrate this distinction, three cases are presented in this subsection:

- case (0_1) is an instance of irrelevance.
- case (0_2) contains elements of irrelevance and inadequate reporting.
- case (0_3) fully represents an instance of misreporting.

### 5.1.1 Case (0_1): Ericeira Intermodal Park[26]


*Figure 4 - Aerial view of the intermodal park. [(0_1)map]*

Our first case relates to feedback we received from Portuguese members regarding the *2023 ECF Policy Brief EU Structural Funds for Cycling Investments*[27]. According to the feedback, the €293 million investment in 090 predicted by ECF was not perceived on the ground. Cases as the following might be the reason why.

The project was implemented by the Municipality of Mafra, in the Lisbon Metropolitan area. It was reported under Category of Intervention 090 (cycle tracks and footpaths). The project entailed a total budget of €1,951,584.51 and EU contribution of €1,121,786.88 from the European Regional Development Fund (ERDF). The project was completed July 10th, 2020, with the total expenditure of granted funds by the municipality[26].

[26] https://linkedopendata.eu/wiki/Item:Q2882193
[27]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf

By reading the project description, its irrelevance to its CI results clear:

*Construction of an Intermodal Park that will have 31 park places for buses, 162 seats for light vehicles and 8 seats for motorhomes. The intervention area has an area of about 14. 871 m² which is located in the parish of Ericeira and confronts the west with Rua Alto da Camacha, to the north with Rua dos Eucaliptos, to the south with the new facilities of the Ericeira GNR and the source with a particular land.*

By consulting *Transparência*[28], the Portuguese State's information portal for public resource management, we identified more detailed information. This showed that the only cycling-related investment consisted of installing bicycle parking; a negligible investment when compared to facilities for cars, tourist buses, motorhomes, motorbikes, and building a new bus terminal that were also part of the project. Additionally, funds were used for the reorganization of car traffic and landscaping[29]. Triangulation with photographic sources revealed that the total bicycle infrastructure amounts to a quasi-negligible quantity: five bike racks with a total capacity of ten bicycles.


*Figure 5 – Illustration of the 5 bike racks. Motorcycle and car parking spaces can also be seen. [(0_1)street1_2023]*

*Figure 6 – The highlighted area corresponds to the public transport terminus. Buses connecting the intermodal park to the city centre can be seen in the background. [(0_1)img6]*

[28] https://transparencia.gov.pt/en/fundos-europeus/pt2020/beneficiarios-projetos/projeto/LISBOA-08-1406-FEDER-000044/#project_information_id
[29] https://www.cm-mafra.pt/pages/1144?news_id=949

Although this report understands other intermodal hubs as cycling oriented investments, the exceptional characteristics of the Ericeira intermodal park do not allow it to be classified as such. Firstly, an excessive discrepancy exists between the five parking spaces created for bicycles and 209 created for other vehicles (along with other amenities). Secondly, the project is openly embedded in motor vehicle mobility as two official sources describe its position as strategically adjacent to a motorway[30]. Lastly, the project is framed as a response to the increased use of public transport, specifically during the touristic high season[31]. On the other hand, it is not located in strategic proximity to any active mobility corridor or cycle path.

Additionally, it is interesting to note that the construction of this intermodal park led to the redevelopment of the previous bus station into a car park, with a capacity for 121 spaces, (…) right in the centre of Ericeira"[32]. While this is not part of the project itself, it reveals further contextual information that frames the Ericeira intermodal park as being targeted to easing access to the city centre by tourists and motor vehicles, while neglecting the key active mobility objective of CI 090.

In conclusion, the Ericeira intermodal park bears little to no relevance to its CI "cycle tracks and footpaths". Data triangulation reveals that the main targets of these projects are public transport and motorised individual transport. When compared to the facilities created for the two, cycling infrastructure is negligible. Moreover, further contextualisation reveals that the overall objective is increasing traffic, as opposed to decreasing it and creating better conditions for cycling and other active modes of transport. Further supporting this claim, no active mobility corridors are developed between the intermodal park and the city under the project's framework. We then conclude that this project fully represents a Cycling Score of 0 within CI 090.

In response to received feedback, the presence of large-scale projects as Ericeira's intermodal park within the CI can be the reason why reported investments are not perceived on the ground. Large infrastructure absorbs more funding than the development of cycle tracks and footpaths due to the nature of the works. Therefore, its inclusion within the CI artificially inflated the total investment figures.

### 5.1.2 Case (0_2): Redevelopment, protection and enhancement of the griffin aviaries area in the municipality of Alcara li Fusi[33]

This project, implemented in the municipality of Alcara li Fusi (province of Messina, Italy), introduces elements of unclear reporting to the equation while still retaining unrelated project elements. The total budget expenditure was of €480,000 with an EU contribution of €384,000 from the European Regional Development Fund (ERDF), categorized under

[30] https://www.cm-mafra.pt/pages/1144?news_id=949; https://portugal2020.pt/mobilidade-sem-obstaculos-em-mafra-com-apoio-de-fundos-europeus/
[31]https://transparencia.gov.pt/en/fundos-europeus/pt2020/beneficiarios-projetos/projeto/LISBOA-08-1406-FEDER-000044/#project_information_id
[32] https://www.cm-mafra.pt/pages/1144?news_id=949
[33] https://linkedopendata.eu/entity/Q4111135

CI 090. Funds originally assigned through the ERDF are now being managed by the local “Piano di Sviluppo e Coesione della Regione Siciliana”.

Within its *Kohesio* file, the project is described to reflect *interventions for the protection and enhancement of areas of attraction of strategic importance (protected areas in the terrestrial and marine spheres, protected landscapes) so as to consolidate and promote development processes.*[34]

While this certainly retains some relevance with the reported policy objective “Greener, carbon free Europe” it is difficult to identify any particular emphasis on pedestrian or cycling infrastructure from the description alone.

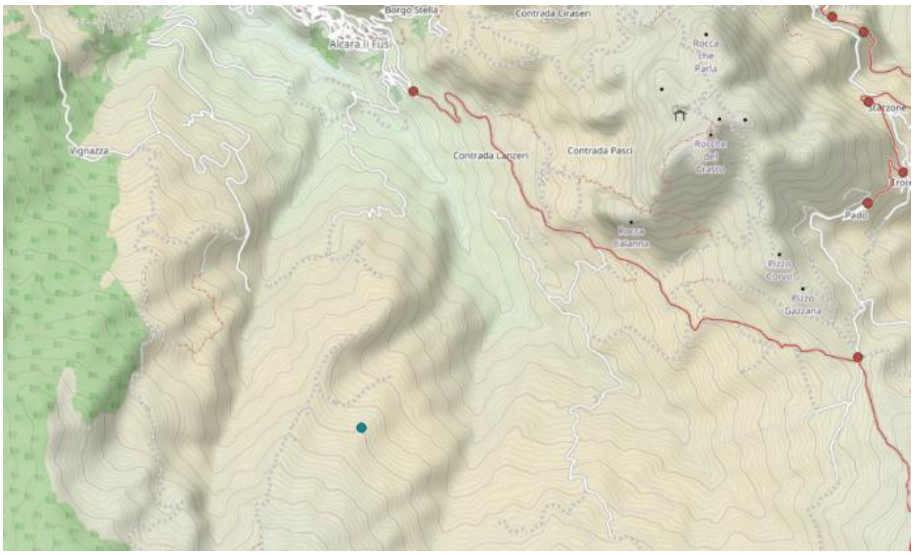


*Figure 7 - OSM walking and cycling trail (red) and project coordinates (blue). [(0_2)osm]*

The target area is in fact an Italian nature park, Parco dei Nebrodi, in Alcara li Fusi (top left of the map). This park is known for the presence of griffons, that can be admired by engaging in guided tours[35]. Like other natural parks, it is bound to contain footpaths and/or cycle paths, however the degree to which this specific investment targets them is not clear from the provided description.

More information is obtained through the publicly available call for tenders published by the communal administration, that lists the following interventions:[36]

- Levelling and paving of the trail base downstream of the aviary area with a draining surface material “compliant with Environmental Compatibility Criteria”
- Installation of informational and directional signage, a wooden canopy, and two wooden gazebos
- Construction of short sections of dry-stone walls

[34] https://linkedopendata.eu/entity/Q4111135
[35] https://www.parcodeinebrodi.it/pdf/Area_del_grifone_Alcara_Li_Fusi.pdf
[36] https://www.servizipa.cloud/comuni/img/comune/allegato/bando206_1769.pdf

- Construction of wooden fences made of chestnut wood, of the “St. Andrew’s cross” type
- Redevelopment of the griffon aviary area through environmentally compatible interventions
- Redevelopment of the area designated for birdwatching activities
- Installation of photovoltaic lighting fixtures (PV) with low visual impact, mounted on wooden poles along the access paths to the trail, and within the aviary and birdwatching areas.

However, in the publicly available document D.D.G. n.1155[37], no clear indication of the expenses except for birdwatching equipment for €3.000 is available. We could not find more detailed breakdown of expenses. Therefore, even if the pedestrian trail has been impacted the investment tied to it is unquantifiable. The reported project description makes the track appear secondary to the tourist and nature preservation-oriented infrastructure that surrounds it and the landscaping this infrastructure entails. The interventions targeted to the griffon aviary do not in fact impact the footpath in any way as the main scope of this structure is to host griffons imported from Spain while they acclimate to the park’s temperature[38].

To conclude, this case retains elements of the previous and following cases: it contains non-relevant investments, while those that might be relevant are impossible to detect through *Kohesio*’s dataset and remain uncertain when retrieved from other sources. The combination of these elements contributes to confirming the assignment of Cycling Score 0 to this project.

### 5.1.3 Case (0_3): Reducing carbon emissions in the municipality of Huşi based on the Sustainable Urban Mobility Plan[39]

In this case, CS0 has been assigned to the project because of the reporting format, not its content. Misreporting is hereby not intended as a malicious effort to hide expenses under a non-relevant CI, but as a formal error caused by excessively long and inaccurate reporting.

As explained above, CI 083 was adopted under the current financing period (2021-2027) to indicate “cycling infrastructure” investments. This would greatly improve budget expenditure tracking if universally implemented. However, a practice of declaring aggregate projects with a vast number of CI is present in some countries’ reporting. The presentation of multi-CI projects includes projects that do not mention cycling infrastructure but may include it covertly, increasing the difficulty of detecting cycling investment.

The reduction of CO2 emissions in the municipality of Huşi (Romania) corresponds to the situation described above. The project was financed through the ERDF with a

[37] https://www.regione.sicilia.it/sites/default/files/2022-10/1155_2022_2.pdf
[38] https://www.parcodeinebrodi.it/pdf/Area_del_grifone_Alcara_Li_Fusi.pdf
[39] https://linkedopendata.eu/entity/Q7418839

reported co financing rate of 98% of a total budget of €1,663,666.21. Seven Categories of Intervention are reported:

- Replacement of coal-based heating systems by gas-based heating systems for climate mitigation purposes
- Clean urban transport rolling stock
- Digitalization of urban transport
- Alternative fuels infrastructure
- Air quality and noise reduction measures
- Cycling infrastructure (CI 083)
- Clean urban transport infrastructure

Cycling is listed as a CI 083 - “cycling infrastructure”, but the reported project description does not refer to it:

*Improve the infrastructure needed for the use of clean public transport modes, by electric or hybrid cars, in order to reduce the number of journeys by private transport (personal cars) and, implicitly, to reduce CO2 equivalent emissions from transport.* [40]

This highlights the main shortcoming of multi-CI reporting: the lack of clarity. This format, adopted by a minority of countries, makes it impossible to evaluate the extent to which the cycling component is important to the infrastructure project, as it is embedded into generalist terms and strategies or is not mentioned at all.

Source triangulation proves that cycling investment is present within the project in the form of 1.9km of cycle path development and “increasing the number of people using the bike lanes”[41]. However, other elements present in the official SUMP bring us to a second issue derived from the multi-CI reporting system: the inflation of investment figures. When part of a CI’s budget calculation, multi-CI projects in fact inflate the CI’s budget by including activities that do not relate to it. These activities are often extensive and lead to large expenditures, as in the case for Huşi’s SUMP. The SUMP in fact includes the following investments that are not related to cycling:

- Purchase of 10 electric buses
- Purchase and installation of 10 recharging stations for electrically charged buses
- Construction/modernization/rehabilitation of 52 public transport stations
- Asphalting of 2.5 km of streets primarily used by public passenger transport
- Construction of a public transport terminal
- Creation of an e-ticketing and traffic monitoring system
- Decrease in the amount of greenhouse gases
- Increasing the number of passengers transported within the public passenger transport systems

[40] https://linkedopendata.eu/wiki/Item:Q7418839
[41] https://www.primariahusi.ro/wp-content/uploads/2022/12/informare_PMUD_finala.pdf

In conclusion this case reflects the issues created by reporting projects under multiple categories, a practice that leads to confusion and impossibility to verify the presence and relevance of cycling investment. If reported with a clearer description or broken down into different projects based on the CI at hand, this case would have corresponded respectively to scores 2 or 4. However, an excessively vague description paired with the association with multiple CIs led it to obtain a Cycling Score of 0.

## 5.2 Cycling Score 1

In this section, we provide an overview of projects that are targeted towards pedestrian mobility. This category refers to cases whose project title and description match the following keyword combinations:

- *Ped_only*
- *Ped_only + other*

While this is not the key focus of the European Cyclist's Federation, the presentation of these cases might reveal useful to pedestrian oriented organizations, along with generally shining light on the dataset. The following cases are presented below:

- Case (1_1): where the pedestrian element is the primary focus of the project
- Case (1_2): where the pedestrian element is subordinated to other project targets.
- Case (1_3): where a pedestrian project is listed under the cycling exclusive CI 083.

### 5.2.1 Case (1_1): Pedestrianization of Plaza de Angustias and historic city centre streets in Jerez[42]

This case illustrates a perfect example of pedestrian investment covered by CI 090. The project titled "Measures for a sustainable mobility model" entailed a €388,800.0 investment with an EU contribution of €313,372.8 under the ERDF. Interventions are described as follows:

*In order to promote sustainable urban mobility, two measures are proposed for the pedestrianisation of streets in the historic centre of the city, provided for in the Municipal Urban Mobility Plan, currently with high traffic density, which will encourage and encourage pedestrian displacement. A first step is the pedestrianisation of the "L" contour of the rolled roads of the Plaza de las Angustias; and a second measure would be the pedestrianisation of the roads on Chapinería and Carmen streets, as continuity and*

[42] https://linkedopendata.eu/wiki/Item:Q3170426

*synergy to another important project, in this same environment, which will also be carried out with the help of other European funds*[42].

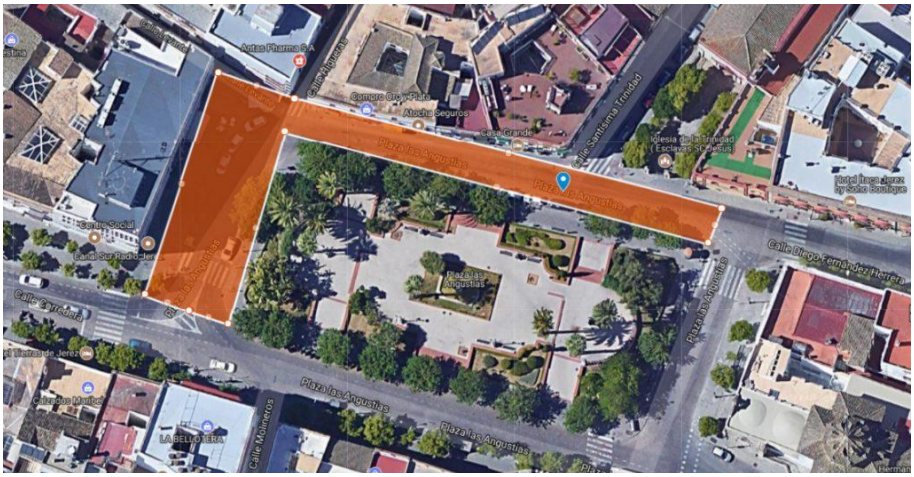


*Figure 8 – Image taken from official project plans show the pedestrianised area in Plaza de Angustias. [(1_1)doc1]*

The project targeted a total area of 3,500 ㎡, of which 1,500 ㎡ were reclaimed from motorised transport. The action involved the pedestrianization of the L shaped section shown above and roads Carmen and Chapinería shown below. This was enacted to give the city back to its inhabitants and favour the business activity of merchants and hotels present in the area. Moreover, as in other project presented in this overview, the pedestrianisation effort is framed as benefitting touristic experience[43].

Nonetheless, four elements of the projects appear not to be targeted to pedestrians:

- The redevelopment and integration of car traffic infrastructure in the southern section of Plaza de Angustias.[43]
- The planting of new greenery and renovation of the square's fountain.[44]
- The installation of a playground. [44]
- Calle Chapinería, which appears to still be open to car traffic.

However, given the context, these investments can be argued to be relevant to the pedestrian component. Firstly, while motorised traffic is still present in Calle Chapinería, parking spaces have been removed and the pavement has been levelled to a uniform surface, suggesting it might now be part of a low traffic zone. Second, the redevelopment of the southern section of Plaza de Angustias is the necessary adaptation of traffic caused by the pedestrianisation of the northern section. Third, the planting of greenery and redevelopment of the fountain are openly framed as methods to increase the attractiveness of the area. The objective of these ancillary investments is thus to attract new users to the infrastructure. Lastly, we could not find any visual or written source confirming that the playground has in fact been developed.

[43] https://www.jerez.es/webs-municipales/planes-especiales-edusi/evento-simple-noticias-edusi/el-gobierno-aprueba-la-peatonalizacion-de-la-plaza-de-las-angustias
[44] https://www.diariodejerez.es/jerez/Abierta-nueva-peatonal-plaza-Angustias-video_0_1227777456.html

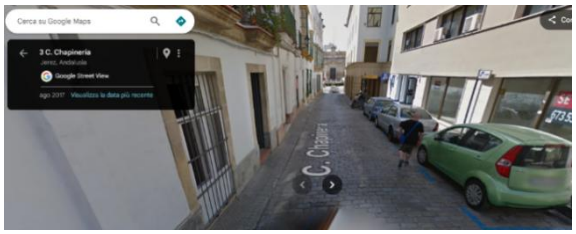

*Figure 9 - Calle Chapinería in 2017, with parking spaces and raised sidewalks. [(1_1)street_calle_chapineria_aug_2017]*

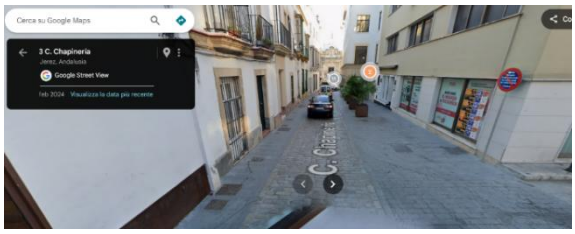

*Figure 10 - Calle Chapinería in 2024, with uniform pedestrian pavement and botanical decorations replacing parking spaces. Motorised traffic appears to be still present in the area. [(1_1)street_calle_chapineria_feb_2024]*

In conclusion, while some ancillary investments are present, the triangulation of available data offers sufficient proof that this project is mainly targeted to an increase in pedestrian traffic in the affected area. These interventions fall under the framework of giving the city back to its inhabitants and favouring sustainable tourism and forms of mobility. The pedestrianisation effort in Jerez can therefore be identified as a best practice example for the reporting of exclusively pedestrian investments under CI 090.

### 5.2.2 Case (1_2): Establishment of a roundabout in the downtown of Gyula[45]

This case explores a project reported under CI 090, involving the construction of a roundabout in Hungarian town of Gyula. The project was implemented between 2018 and 2019 with a total budget of €363,924.93 and a reported EU contribution of €309,336.19 under the ERDF.

The *Kohesio* description is excessively long to be reported in full, therefore a list of the main elements follows:

- Situation prior to intervention: Peace Avenue – Eötvös Street – Árpád Street was a dangerous and overwhelmed intersection leading to accidents. Pavement is uneven and deteriorated.
- Intervention: replacement of the intersection with a roundabout and other motorised traffic safety measures, rerouting of pedestrian traffic through islands separating the bypass and new pedestrian crossings.
- Other: Acquisition of land and rebuilding of fences, traffic signalling and drainage.

[45] https://linkedopendata.eu/wiki/Item:Q3949877

From the description, we evince that pedestrian infrastructure is not the main target of the investment. The investment primarily targets the creation of the roundabout, that aids motorised traffic. The only pedestrian element is the redirection of its traffic and the reconstruction of sidewalks that, as shown by street view data acquired prior to the project, were already present (even if deteriorated). Compared to case (1_1), the situation is reversed: motorised traffic-oriented measures trigger pedestrian-oriented adaptation measures.


*Figure 11 - Street view of Árpád Street showing the presence of sidewalks prior to the development. [(1_2)street_2011]*


*Figure 12 - Illustration of the same intersection after the intervention. The sidewalk does not seem to have been widened, but a pedestrian crossing has been added. [(1_2)street_2025]*

Triangulating the project description with other sources reveals the presence of car centric and other ancillary investment which reinforce the secondary character of the pedestrian element. To begin, the diversion island through which pedestrian traffic is redirected was designed to avoid those driving in direction of Árpád Street having to enter the roundabout to "speed up traffic" [46], a measure that endangers pedestrians and cyclists. To further aid motorised traffic, the investment also includes a widening of the street surface[47]. Moreover, part of the project was constituted by the "replacement of the water backbone pipes, as well as the laying of new underground cables and the replacement of communication cables", and "13 new lampposts" [48]. While in other cases

[46]https://www.gyulaihirlap.hu/156458-idoutazas-gyulan--5-evvel-ezelott-adtak-at-a-beke-
[47] https://www.gyulaihirlap.hu/125114-lakossagi-forumot-tartottak-a-beke-sugaruti-korfor
[48] https://www.gyulaihirlap.hu/156458-idoutazas-gyulan--5-evvel-ezelott-adtak-at-a-beke-

we consider public lighting as part of the pedestrian and cycling infrastructure, the mention of luminaries being installed as well for the zebra crossing[48] makes it clear that the lampposts mentioned before are targeted to motorised vehicle infrastructure.

Other than the establishment of zebra crossing, another element likely motivates the classification of this apparently unrelated project under CI 090: according to a declaration by mayor Ernő Görgényi, the establishment of the roundabout is a direct consequence of pedestrianisation. A news article in fact explains how the pedestrianisation of the city centre of Gyula led to increased traffic load on the streets affected by the project. Therefore, the roundabout was established to avoid bottlenecks[47]. Nonetheless, CI 090 targets cycle tracks and footpaths, not their consequences.

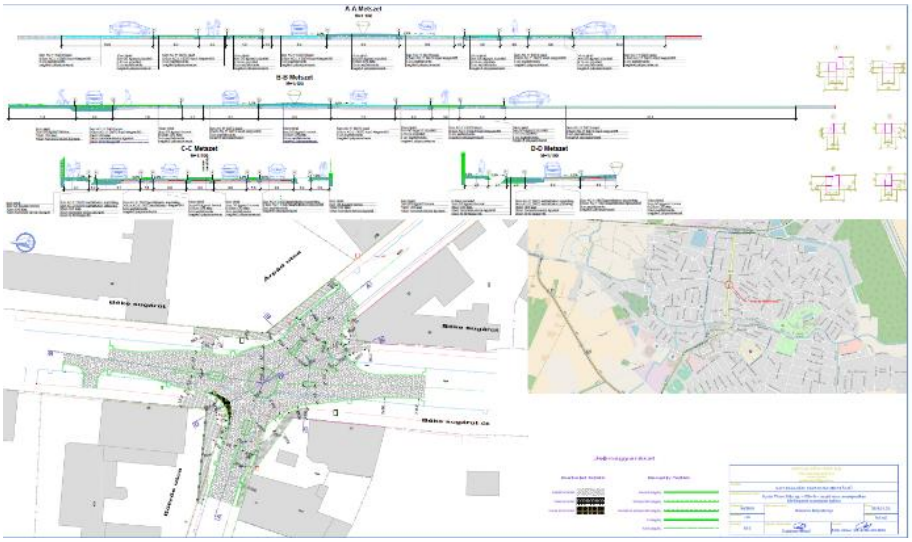

*Figure 13 - Snapshot of official project documents showing how pedestrian infrastructure (sidewalks and crossings) is present at the project level but does not cover the major affected surface. [(1_2)doc1]*

In conclusion, although the project is partially oriented towards pedestrians, the construction of a roundabout in downtown Gyula exemplifies those 090 CI projects where pedestrian considerations are secondary to motorised traffic in budget allocation. While still qualifying for a Cycling Score of 1, this case demonstrates the contemporary occurrence of “pedestrian” and “other” investment categories. Data triangulation reveals that several additional interventions were implemented under this 090 coded project, the most significant being the development of motorised vehicle infrastructure. Other ancillary expenses are also present; however, these are typical in broader renovation efforts. For instance, renewing underground infrastructure is a logical step when surface-level works are undertaken. Nevertheless, these ancillary costs cause the project to resemble case 0_3, as they inflate the CI’s budget estimate with investments that are not strictly related to pedestrian or cycling infrastructure.

### 5.2.3 Case (1_ 3): Reconstruction and construction of a pavement in the village Veselíčko, m. no. Tupec, along the road III/43610 including the parking area at the kindergarten[49]

This case overviews the renovation and construction of pavements in the village of Tupec, Czechia. This project, reported under CI 083, reveals an important inconsistency within this Category of Intervention. As CI 083 stands for “cycling infrastructure”, it should not contain any project oriented to pedestrian or motorised traffic. However, as shown by this case, it does.

The project was developed with a total investment of €62,386.15 and an EU contribution of €59,266.84 under the ERDF framework. On *Kohesio*, the following project description is presented:

*The purpose of the project is the construction, modernization and reconstruction of pedestrian roads.*

The reported description would be adequate if it was categorised under CI 090, but it clashes with the cycling exclusivity of CI 083. Moreover, source triangulation reveals that it also contains a degree of motorised traffic infrastructure. The main element of this infrastructure is the parking area mentioned in the title, that refers to the construction of a longitudinal parking area in proximity to the village’s kindergarten[50]. Translating the official project plan document, it is possible to see how the overall project is divided into 5 components[51]:

- Sidewalk, Longitudinal Parking Area – Kindergarten Location (new construction)
- Paved Area – Kindergarten Location (new construction)
- Sidewalk – Section I (reconstruction)
- Sidewalk – Section II (new construction)
- Relocation of CETIN Communication Cable (new construction)

Given the “new construction” tag assigned to it, the development of a car park does not appear to be related to or direct consequence of the introduction of new sidewalks. This leads to the conclusion that, within this project categorized as “cycling infrastructure”, pedestrian, car and ancillary (CETIN communication cables) infrastructure has been developed, all of which have the repercussion of artificially inflating the budget.

[49] https://linkedopendata.eu/wiki/Item:Q7413435
[50] https://nen.nipez.cz/en/profily-zadavatelu-platne/detail-profilu/veselicko/zahajene-zakazky/detail-zakazky/N006-24-V00007747
[51] https://nen.nipez.cz/en/verejne-zakazky/detail-zakazky/N006-24-V00007747/zadavaci-dokumentace


*Figure 14 - Official project map (doc3) showcasing "Grass-grid concrete paving (parking area)" (yellow); "Concrete paving thickness 8cm (driveway)" (red) and "Concrete paving thickness 8cm (parking area)" (gray). [(1_3)doc3]*

To conclude, this project reveals the inconsistency of CI 083 in two distinct manners. Firstly, it confirms the trend identified by the quantitative analysis: the new CI has changed only formally, while it retains the meaning of its predecessor CI 090, including both pedestrian and cycling oriented investments. Moreover, it reveals the persistence of hidden and ancillaryinvestments targeted to motorised vehicle and other infrastructure, that inflate the budget and are revealed exclusively through data triangulation. The project coincides with Cycling Score 1 but cannot be flagged as a best practice example due to the CI to that it is assigned.

## 5.3 Cycling Score 2

The set of case studies that follows provides an overview of projects where the following keyword combination is detected:

- *Cycling + other*

This score primarily covers multimodal and sustainable mobility-oriented projects, where cycling is one of the many components of a Sustainable Urban Mobility Plan (SUMP). These are prevalent within CI 043 (316 cases), where a vast majority of projects consists in the development of intermodal hubs and broader development of SUMPs. Due to their multiple dimensions, these investments have higher budgets than purely cycling or pedestrian oriented ones, explaining why the aggregate investments tied to Cycling Scores 2,3 and 4 under CI 043 amount to €0.8bn more than those under CI 090.

Two cases are considered for this Cycling Score:

- Case (2_1): where cycling is an important component of a broader project.
- Case (2_2): Where cycling is the primary target of investment.

### 5.3.1 Case (2_1): P+R Borovnica[52]

This first case concerns the construction of a Park and Ride (P+R) facility in the town of Borovnica, Slovenia. The project falls under CI 043 and has a total budget of €312,500, fully financed by the EU through the Cohesion Fund (CF). The following project description is reported on *Kohesio*:

*The operation consists of the establishment of a P+R parking area at the Borovnica railway station, measuring 3,170 m², with 99 parking spaces for passenger cars, 4 of which are disabled parking spaces and 10 parking spaces for electric cars or plug-in hybrids. Road lighting, traffic signalling, drainage and horticultural regulation of the area will also be regulated. 2 covered car parks with a capacity of 50 wheels will be set up for bicycle parking.*

*Figure 15 - Weather sheltered bicycle parking racks in the Park+Ride facility. [(2_1)img5]*

Cycling is hereby one of multiple subjects of investment within the broader framework of an integrated urban transportation strategy in the Ljubljana province[53]. The strategy includes the development of intermodal nodes with the objective of facilitating transition between private (car and bicycle) and public (railway) forms of transport.

The difference between this P+R facility and Ericeira's intermodal park pivots on the relevance of cycling as a means of transport in the project conception and description. While car and railway transport remain the primary focus, cycling is not demoted to a cosmetic accessory of the project. Communications written after the completion of the project reveal an increase in the total number of bike parking, amounting to a total of 102 spaces[54]. Additionally, the Park and Ride facility is embedded in a SUMP that is particularly targeted to cycling: contemporarily to this project, the municipality of Borovnica also undertook the construction of 0.7km of cycling track connecting the facility

[52] https://linkedopendata.eu/wiki/Item:Q3273446
[53] https://rralur.si/novice/slovesna-otvoritev-pr-pri-zelezniski-postaji-borovnica/
[54] https://www.borovnica.si/post/683620

to Breg and implemented measures to increase traffic safety and a series of initiatives to promote sustainable mobility[55]. The promotion of this infrastructure was coherent with an emphasis on cycling, as the P+R facility was framed as a major cycling investment. In occasion of its grand opening, two cycling trips were in fact organised having the facility as their destination point[56]. Consequently, the bike parking present in the facility is not an isolated addition to a car centric project but a meaningful element of an integrated cycling strategy.

In conclusion, Borovnica's Park and Ride represents a case in which bicycle infrastructure is embedded in the project and the investment in both technical and political terms. This stands in opposition to the Ericeira intermodal park presented above, where the totality of bike infrastructure amounts to a negligible investment and the absence of cycling infrastructure nearby further diminishes its significance. In conclusion, Borovnica's intermodal park therefore adequately represents Cycling Score 2.

### 5.3.2 Case (2_ 2): Development of the Maków commune through the creation of an integrated network of cycling routes[57]

While prevalent in CI 043, Cycling Score 2 also appears in CI 083, where 22 cases were assigned to this score. One such case is the development of the Polish commune of Maków. The project had a total budget of €1,500,624.76 with an EU contribution of €1,275,531.04 under the ERDF framework.

As the description reported on *Kohesio* is excessively long to report in its entirety, the following summary is provided[56]:

- The project is part of the promotion of cycling routes as a single, integrated tourism product in the Łódź voivodship.
- Signage an up-to-date cartography are considered fundamental elements for the development of new cycling routes.
- Task 1: Creation of recreational space for residents of the Maków commune along with a bicycle path. - construction of a cycle path Maków Kolonia - Wola Makowska - construction of an integrated cycle path with a pavement, a playground, a gazebo for anglers, a place for a bonfire, equipment.
- Task 2: Creation of an application for bicycles and promotional banners.

Moreover, other sources reveal plans to also include a bike parking facility and bird watching tower as part of the works[58].

While this project is primarily oriented towards cycling, it contains investments that are not strictly related to cycling mobility infrastructure. These are a recreational space, a playground, a gazebo for anglers, a place for a bonfire and a bird watching tower.

[55] https://civinet-slohr.eu/wp-content/uploads/2023/03/SUSTAINABLE-MOBILTY-IN-THE-MUNICIPALITY-OF-BOROVNICA.pdf
[56] https://www.borovnica.si/post/691902
[57] https://linkedopendata.eu/entity/Q7369631
[58] https://www.gminamakow.info/samorzad/fundusze-europejskie-dla-%C5%82odzkiego-2021-%E2%80%93-2027.html

As shown by case studies presented above, ancillary investments targeted to recreational activities are typical of projects that identify the promotion of tourism as their main objective. This distinguishes the case from the P+R facility in Borovnica (case 2_1) because, here—as in Plaza de Angustias (case 1_1)—the ancillary investment aims to make the bicycle infrastructure more appealing to users, thereby enhancing its functionality. By increasing the number of activities present along the cycle route, the Maków commune has the reported intent of injecting new users within the system that is described as a "single, integrated tourism product"[59].

Lastly, official project documents reveal that sidewalks will be built along the cycle path[60]. However, we could not find visual evidence of this. The inclusion of pedestrian elements in the reported project description would have led to the project to obtain a Cycling Score of 3 however, once again, this information is only accessible via source triangulation.

*Figure 16 – A section of the cycling route. [(2_2)img2]*

In conclusion, while this case correctly obtained a Cycling Score of 2 according to the content analysis, a deeper understanding of the intentions behind it, retained centrality of the cycle infrastructure and the possibility of pedestrian infrastructure running besides it positions it closer to a score 3 than its predecessor. Nevertheless, the presence of projects containing pedestrian and unrelated investment within CI 083 further undermines the integrity of this CI's definition.

[59] https://asystent.postepowania.pl/org/gminamakow/postepowania/1674
[60] blob:https://asystent.postepowania.pl/081dfb7f-f168-4ff1-8e35-887d3bb053c2

## 5.4 Cycling Score 3

This Cycling Score contains projects involving both pedestrian and cycling investment targets. These include projects with the following keyword detection combinations:

- *Ped_only* + *cycling* and/or *ped_cycle*
- *Ped_only* + cycling and/or *ped_cycle +other*

These primarily include projects that are designed to be used by cycling and pedestrian traffic contemporarily as active mobility corridors, greenways, bike-foot paths, cycling and pedestrian bridges etc. Moreover, larger SUMPs or intermodal projects that explicitly mention pedestrian and cycling targets are also included within this Cycling Score.

As part of this overview, three cases are presented:

- Case (3_1): where pedestrian and cycling elements equally absorb investment.
- Case (3_2): where pedestrian and cycling elements equally absorb investment in a formally cycling exclusive CI.
- Case (3_3): where the cycling element is the main recipient of investment.

### 5.4.1 Case (3_1): Creation of a soft connection between Indre and the station Indre — Saint Herblain[61]

The construction of a soft connection between the French town of Indre and its railway station is reported under CI 090. The project involved a total investment of €770,394.94 entailing an EU contribution of €192,598.73 under the ERDF framework. The following project description can be read in *Kohesio*:

*The project to create a soft road between Indre and the station of Indre is carried by Nantes Métropole as part of its ITI action plan. The aim of this operation is to facilitate multimodality with trains and to allow young Indais to safely go to college. It is a gentle 520-metre track consisting of a wooden walkway overlooking a wetland and an extension of a traditional cycle path allowing the continuity of the route.*


*Figure 17 - The cycling-pedestrian bypass along Rue d'Indre. The passage runs parallel to the street allowing users to reach the station in safety. [(3_1)map]*

[61] https://linkedopendata.eu/wiki/Item:Q3699444

This project coincides with the ideal form of Cycling Score 3: a mixed project accessible and uniquely targeted to pedestrians and cyclists. While embedded in broader multimodality objectives, the project in fact exclusively targets the section of infrastructure that is dedicated to pedestrian and cycling traffic.

The project is divided into two lots: the development of a footbridge and the construction of a cycle track[62]. While these are conventionally intended respectively as a pedestrian and cycling infrastructure, triangulating the tender description with other sources revealed both are intended to be accessible to both active modes [63], confirming the *Kohesio* description.


*Figure 18 - Access point to the cycling-pedestrian route. The highlighted sign indicates it is accessible to both pedestrians and cyclists. [(3_1)street2_2022]*

The project, as others encountered in this analysis (see cases (1_1) and (3_2)), is framed as giving back the urban fabric to its inhabitants, providing safe accessibility to areas that were previously separated from the urban centre by car infrastructure[63]. The 3-metre wide, 2km long path has been associated to overt cycling objectives by Jacques Garreau, mayor of Bouaye, who stated: “2% of users go by bike, we hope to increase to 12% in 2030."[63]

In conclusion, this project reflects the overall promotion of active mobility. Both pedestrians and cyclists are considered in the equation of the project, that connects the urban centre to areas that were previously dangerous to reach through these modes. Lastly, source triangulation did not reveal other investments that artificially inflate the project’s budget. Consequently, this project reflects a best practice example of Cycling Score 3, where active mobility modes equally absorb the entirety of the dedicated investment.

[62] https://www.boamp.fr/telechargements/PDF/2015/BOAMP-N-AO_2015_086005/15-43063.pdf
[63] https://www.ouest-france.fr/pays-de-la-loire/saint-herblain-44800/entre-indre-et-saint-herblain-la-passerelle-du-futur-4116798

### 5.4.2 Case (3_2): Construction of a foot-bike footbridge over ul. Struga[64]

This case involves the construction of a cyclist and pedestrian bridge over Struga Street, a major traffic artery of the town of Szczecin, Poland. The total budget for the development of the project entailed an investment of €1,965,354.47, of which €1,561,548.8 funded through ERDF. The project is listed under CI 083 but clearly does not correspond to the cycling exclusive definition of this CI.

As reported in *Kohesio*, the totality of the project entails the development of a "footbridge connecting walking and cycling traffic between the northern and southern parts of Struga street in Szczecin, fully adapted to the pedestrian crossing of people with disabilities and/or limited mobility" along with the construction of connecting roads for pedestrians and cyclists leading to and from the infrastructure[64]. Other investments targeted to accompanying infrastructure (a water fountain, the demolition and reconstruction of conflicting infrastructure and the development of greenery) accompanied the investment[64]. Similarly to the previous case, this project returns the urban fabric to citizens engaging in active modes, by providing a connection between residential areas and retail centres previously only accessible by car or via long detours[65]. One source identifies the citizens of the area as the main drivers of the realisation of the bridge[66].

*Figure 19 - Aerial view of the bridge showing separate access points and infrastructure leading to and from the pedestrian-cycle bridge. [(3_2)img4]*

The bridge measures 35 metres long and 4 metres wide [67]. As shown in the project plans, two separate access points are granted to cyclists (gently sloped ramp) and pedestrians (stairway). The ramp is divided into two sections separating cycling access and access

[64] https://linkedopendata.eu/wiki/Item:Q7378008
[65] https://szczecin.wyborcza.pl/szczecin/7,34939,31593615,kladka-ze-szczecinskiego-budzetu-obywatelskiego-dostala-pokazne.html
[66] https://szczecin.se.pl/to-byl-pomysl-samych-mieszkancow-nowa-kladka-nad-ul-struga-juz-gotowa-aa-eq3t-8vZA-FAQs.html
[67] https://24kurier.pl/aktualnosci/wiadomosci/kladka-nad-ul-struga-prawie-gotowa/

for people with disabilities or limited mobility. In its flat central section, the bridge surface is shared between the three.

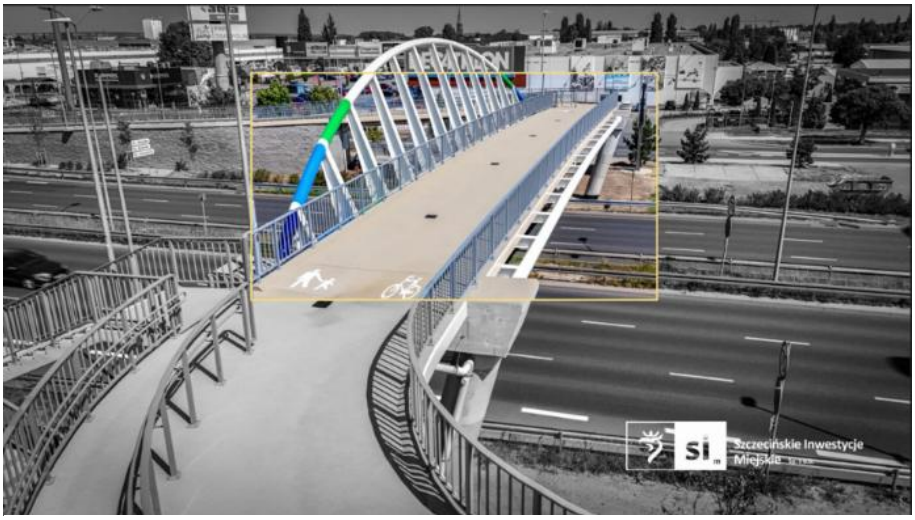


*Figure 20 - Central section of the bridge, shared traffic. [(3_2)img3]*

The bridge is therefore a fully cycling and pedestrian oriented investment. This reveals two major inconsistencies in the dataset: firstly, the term “footbridge” is misused as a synonym for foot and bicycle bridge (albeit only in the project description); secondly, a project that is intrinsically pedestrian and cycling is listed under a Category of Intervention that should be restricted to cycling infrastructure. As further supported by the following subsection, this second instance is widespread among the 2021-2017 dataset due to the intrinsic interrelation between cycling and pedestrian infrastructure and the absence of a hybrid CI.

In conclusion, the construction of a foot-bike footbridge over Struga street would coincide with best practices in reporting of cycle and pedestrian investments under CI 090. This project in fact fully coincides to Cycling Score 3, connecting two parts of the urban fabric that were previously inaccessible to active modes. However, its position within CI 083 makes it an example of inadequate reporting. This, in addition to the misuse of the term “footbridge” in the project description reveals problematic inconsistencies in the dataset.

### 5.4.3 Case (3_3): Bicycle and pedestrian facilities rue de Lannoy in Villeneuve D'Ascq[68]

This project represents a different instance of score 3. In this case, while both pedestrian and cycling investments are present, the latter establishes itself as the primary target of the project in agreement with CI 083 under which it is reported. The project involved a total investment of €456,259.89 and EU contribution of €228,129.25. In *Kohesio*, it is reported as follows:

[68] https://linkedopendata.eu/entity/Q7357219

*The European metropolis of Lille has been implementing a structured cycling policy for many years but wishes to go further to become a real "cycling metropolis" as part of a complete "bicycle ecosystem". Increasing the comfort and safety of cyclists is a priority to achieve the objectives of increasing travel in active modes and ensuring better multimodality between modes of travel. Rue de Lannoy is an essential axis to connect the Cousinerie and Recueil districts to Villeneuve d'Ascq and the city of Hem but does not include any cycling facilities. The development work for bicycles will restore a secure cycling network and remove the discontinuity of the Roubaix roundabout crossing.*

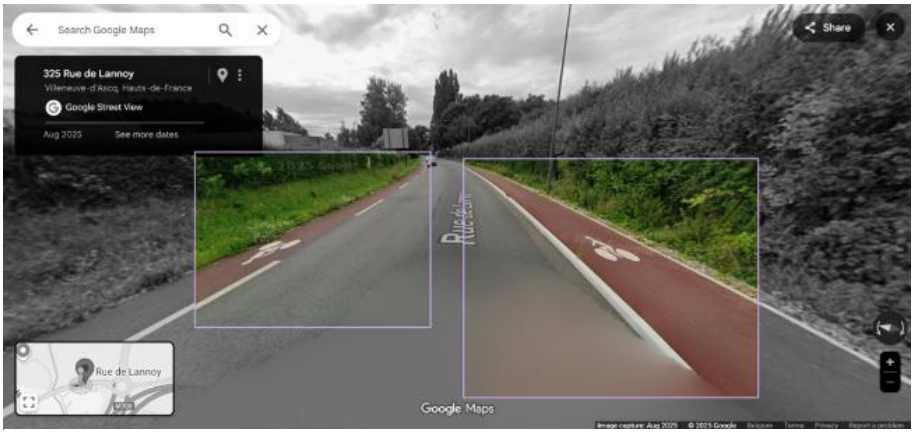


*Figure 21 - Along Rue de Lannoy, the investment targeted the development of a cycling exclusive path and track as shown by horizontal signage. [(3_3)street1_2025]*

The project is thus embedded within a cycling strategy, not a broader active mobility strategy. Moreover, the specific connection is reported as only being targeted to cyclists. However, the project title and a visual survey of the site confirm the presence of pedestrian elements in the construction. The figures below show the presence of a cycle path and a cycle lane along rue de Lannoy culminating in a shared pedestrian and cycle path running along the junction.


*Figure 22 - Travelling further along the road, the cycling infrastructure widens and includes pedestrians. [(3_2)street3_2024]*

Nonetheless, it is unclear whether this second part of the project is part of the investment or not. This is because street view data predates the reported project completion (January 2025). Due to the unavailability of official tender documents and breakdown of

expenses, it is not possible to affirm with certainty whether this project affected both pedestrian and cycling infrastructure.

In conclusion, this case categorized under CI 083 reveals the interrelation between cycling and pedestrian investments. The case in question demonstrates the unlikelihood of having completely cycling oriented investments, as cycle paths are bound to eventually encounter pedestrian facilities as sidewalks, pedestrian crossings and other infrastructural elements that end up being part of the redevelopment works. However, this project is primarily composed by cycling exclusive infrastructure (see Rue de Lannoy). This prevalence, when compared to cases listed in the following subsection, illustrates the high degree of overlap between Cycling Scores 3 and 4. Lastly, when compared to case (3_2), this project points to a greater convergence with CI 083.

## 5.5 Cycling Score 4

Cycling Score 4 has been assigned to projects whose *Kohesio* description only contained keywords related to cycling. This amounts to a total of 1,179 across the three Categories of Intervention. However, due to elements overviewed in previous cases as the interrelation between cycling and pedestrian infrastructure and the presence of ancillary investments, these projects are not always exclusively related to cycling.

Three cases are presented in this subsection:

- Case (4_1): where the quasi totality of the project is oriented to cycling.
- Case (4_2): where the project is primarily targeted to cycling but also presents a substantial number of hidden ancillary investments.
- Case (4_3): where substantial ancillary investments are also present, but under a CI that should be purely oriented towards cycling infrastructure.

### 5.5.1 Case (4_1): Cycling route Michal n/O. – Michal n/O. Kolónia[69]

This case involves the development of a 1.6km cycle path in Michal na Ostrove, Slovakia. The project is categorized under CI 090. The investment corresponds to €169,804.19 with an EU contribution of €144,333.56 under the ERDF framework.

In *Kohesio*, the project is reported as a development of a cycling route and accompanying cycling infrastructure (lockable bicycle shelter) targeted to promoting the attractiveness of non-motorised means and curb the condition of insecurity caused by the previous absence of cycling infrastructure[69]. At a broader level, the project is embedded into IROP intervention strategy, priority axis 1, with specific objective 1.2.2 rooted in the inclusion of cycling as a fully-fledged mode of transport in the *mobility and regional single concept*

[69] https://linkedopendata.eu/wiki/Item:Q3110332

*of cycling routes in TTSK* document, aimed at a creation of a cycling touristic and mobility network and its integration with public transport[70].


*Figure 23- A section of the developed path, including a cycle path and a cyclist crossing. [(4_1)street1_2022]*


*Figure 24 - Lockable bicycle shelter in proximity of the public transport stop. [(4_1)street2_2023]*

Despite most sources depicting the investment to be exclusively targeted to cycling infrastructure, official documents present on the file as (4_1)doc11 make mention of pedestrian infrastructure:

“Laying interlocking pavers, hr. 8 cm for pedestrians up to 20 m2” and “Footpath settlement. concrete curb with a support made of plain concrete into the bed”[71].

However, it remains unclear whether these interventions are the direct consequence of the development of cycling infrastructure upon an already pedestrian area or part of the target investment. As visual evidence, reporting and official communications seem to suggest the latter, this case can be described as a full representation of score 4 within CI 090.

[70]https://linkedopendata.eu/wiki/Item:Q3110332; https://www.michalnaostrove.sk/zverejnovanie/verejne-obstaravanie/vyzvy-archiv/?kateg=15&search=&sort=5

[71] https://www.michalnaostrove.sk/zverejnovanie/verejne-obstaravanie/vyzvy-archiv/?kateg=15&search=&sort=5

In conclusion, the development of the 1.6km cycle path in the Michal na Ostrove represents an instance of best practice in reporting cycling infrastructure. The presence of possible pedestrian investment does not affect its status as, being categorised under CI 090, these are included in the CIs description. The overwhelming prevalence of the cycling element also makes it perfectly convergent with Cycling Score 4.

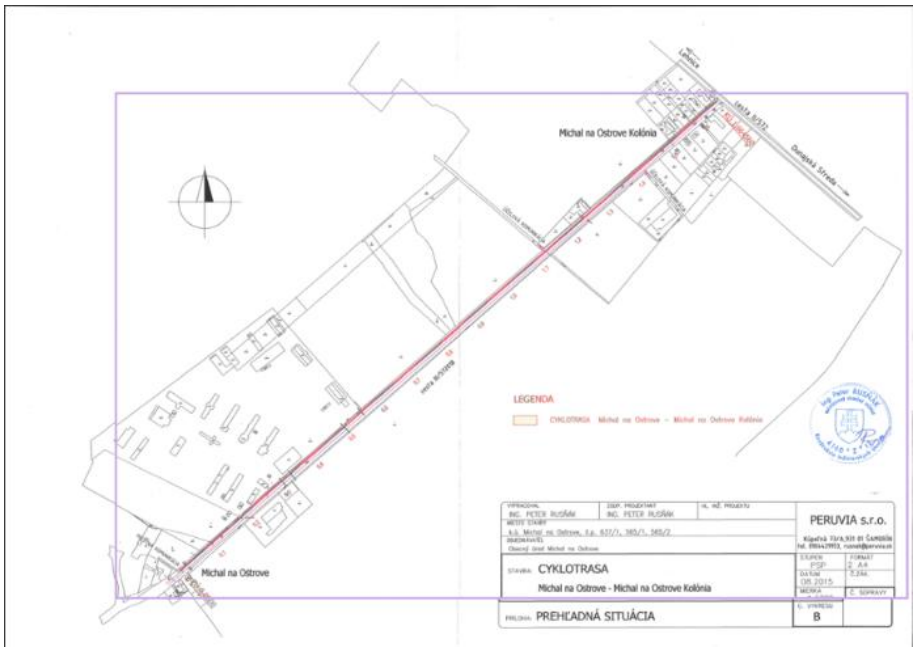


*Figure 25 – Project planimetry, where only cycling infrastructure is mentioned. [(4_1)doc6]*

### 5.5.2 Case (4_2): Construction of cycle paths in Čepin[72]

This project involves the development of cycle path in the Croatian town of Čepin, with a total budget of €1,220,314.24 and an EU contribution of €837,852.03 under the ERDF framework. This project is reported under CI 043, confirming previous ECF findings[73].

As reported in *Kohesio*, the project entails the construction of three cycle paths. The construction is embedded in the overall objective of renovating and modernizing the network of cycle paths and connect various forms of environmentally friendly transport, contemporarily increasing the touristic attractiveness of continental Croatia[74]. While the reported project description represents an investment uniquely targeted to cycling,

[72] https://linkedopendata.eu/wiki/Item:Q2734744
[73]https://www.ecf.com/media/resources/2023/ECF_Policy_Brief_EU_Structural_Funds_for_Cycling_Investments.pdf
[74] https://linkedopendata.eu/wiki/Item:Q2734744; https://trnava-vuc.sk/cyklotrasa-v-obci-michal-na-ostrove

further triangulation reveals the presence of other pedestrian, public transport and motorised vehicle investments that are not openly stated in this description.

The works are divided into three sections[75]:

1. Section: Čepin-Livana: The works include the reconstruction of the existing pavement in the street of pedestrian and bicycle paths. The total length of the section is 1,290 meters. Work began in May 2017.

2. Section: Čepin – Kralja Tomislava Street: The corridor of Kralja Tomislava Street (county road ŽC 4085) consists of pavement, green belt, drainage ditches, driveways, bus stops, parking lots and existing pedestrian paths. The total length of the section is 2,780 meters.

3. Section: Čepin – Kralja Zvonimir Street: The corridor of Kralja Zvonimira Street (county road ŽC 4105) consists of pavements, green belts, drainage ditches, driveways, bus stops, parking lots and existing pedestrian paths. The total length of the section is 2,250 meters.


*Figure 26 - The three sections affected by the investment. [(4_2)img1]*

As one can evince from this, the investment is also targeted at pedestrian traffic (sections 1, 2 and 3), public transport (sections 2 and 3) and car infrastructure (sections 2 and 3). Moreover, along with the promotion of cycling as a means of transport, the project is framed as a means to better connect bus stops to promote the use of public transport and favour multimodality[76]. On the other hand, the adaptation of driveways is not framed

[75] https://www.cepin.hr/izgradnja-biciklistickih-staza-u-cepinu-kroz-eu-projekt-do-63-kilometara-novih-biciklistickih-staza/
[76] https://www.cepin.hr/izgradnja-biciklistickih-staza-u-cepinu-kroz-eu-projekt-do-63-kilometara-novih-biciklistickih-staza/

as a target of investment but as a necessary adaptation to the newly developed cycle path.[77]

All things considered, the share of cycling infrastructure remains significant, with a total development of 6.3km of new bicycle paths along the three sections of the project.[77]


*Figure 27 - A shared pedestrian-bike path on Kralja Tomislava street (section 2). [(4_2)street3_KraljaTomislava_2022]*

In conclusion, this case illustrates two elements of the dataset. Firstly, cycling oriented projects are present within CI 043. Secondly, it reiterates the concept of hidden expenses. The concept refers to part of the investment that are not openly stated in the project description present on *Kohesio* and can be only retrieved through external source triangulation. As developed in the following section, this inhibits the transparency of the dataset and inevitably distorts financial figures.

### 5.5.3 Case (4_3): Cycle path Písek Hřebčinec – Semice[78]

This case covers an instance of cycling investment reported by Czechia under CI 083. While the country's reporting system is criticized in this report, it cannot be denied that a substantial number of projects have been correctly reported as cycling investments. This project took place in the towns of Písek Hřebčinec and Semice. The total budget amounts to €928,529.04 of which €649,970.33 derive from ERDF funds.

The intervention is reported as "Construction, modernization or reconstruction of dedicated road for cyclists or implementation of accompanying cycling infrastructure" on *Kohesio.*

While apparently solely dedicated to cycling, triangulation reveals that pedestrian traffic has also benefitted from the investment[79]. As shown by figure 27, access to the new cycle path is in fact also granted to pedestrians. Moreover, the project involved significant

[77] https://www.cepin.hr/zavrsen-projekt-izgradnje-biciklistickih-staza-u-cepinu-opcina-bolje-povezana-s-okolicom-biciklisti-sigurniji-u-prometu/
[78] https://linkedopendata.eu/wiki/Item:Q7414517
[79] https://mestemnakole.cz/2025/01/nova-cyklostezka-spojila-pisek-a-semice/; https://colas.cz/en/projects/road-construction/cyklo-pisek-semice

landscaping investments targeting the planting of trees along the entire span of the cycleway[80]. Lastly, bus stops have also been built or renovated within the framework of the project[81].

*Figure 28 - access point to the shared pedestrian and cycle path. [(4_3)img2]*

*Figure 29 - One of the two bus stops affected by the project. [(4_3)img5]*

However, it is important to note that the investment remains primarily targeted to cycling, as it targeted the development of a 3m wide 1.2 km long cycle path[82]. Access for pedestrians did not entail the development of different pavement structures or extra facilities for the entirety of the length, other than a sidewalk at its endpoint[83]. Similarly, landscaping measures have only been adopted in the immediate proximity of the cycling infrastructure, suggesting they are part of ameliorating its aesthetic component with the

[80] https://mestemnakole.cz/2025/01/nova-cyklostezka-spojila-pisek-a-semice/
[81] https://mestemnakole.cz/2025/01/nova-cyklostezka-spojila-pisek-a-semice/; https://colas.cz/en/projects/road-construction/cyklo-pisek-semice: https://www.mesto-pisek.cz/pisek-a-semice-spojuje-nova-cyklostezka/d-60983
[82] https://www.mesto-pisek.cz/pisek-a-semice-spojuje-nova-cyklostezka/d-60983
[83] https://colas.cz/en/projects/road-construction/cyklo-pisek-semice

objective of making it more palatable to users as in cases listed above. Moreover, the project is embedded within broader cycling projects: a ring road connecting Písek, Semice and Smrkovice[84] and a marked cycle route No. 1146 leads along the new trail, along which people cycling will get through Nový Dvůr and Tálín to Protivín.[85]

To conclude, this case reiterates what reported in case (3_3): the interrelation between pedestrian and cycling elements. In both cases, the pedestrian element does not lead to the development of new infrastructure but a simple granting of access, leading us to consider the investment as prevalently cycling oriented. The presence of ancillary investments such as landscaping and the development of bus stops however impede this case from being identified as a best practice. This is because, while the first can be argued as being a means to attract more users to the infrastructure, the latter provides an alternative mobility option.

## 5.6 Coordinate inaccuracy

### Case (5_1): Completion of the cycle path in Via Chiesa a San Martino – Comune di Ferrara

We conclude this section with a case illustrating one of the major shortcomings of the dataset: coordinate misreporting. This specific case emerged during the testing phase of preliminary approaches to the study. Originally, this report was conceived to depend on geodata, to systematically verify whether project locations uploaded to *Kohesio* correspond to OSM cycling infrastructure. Two problems emerged from this testing phase:

- The insufficiency of OSM recorded cycling infrastructure
- The inaccuracy of *Kohesio* geodata reporting

While the resolution of the first problem goes beyond the objective of this report – other ECF publications are contributing to enriching OSM databases – the second problem must be brought to the attention of the readers of this report.

[84] https://budejcka.drbna.cz/z-kraje/pisecko/42335-pisek-zacal-stavet-novou-cyklostezku-od-hrebcince-do-obce-semice.html
[85] https://mestemnakole.cz/2025/01/nova-cyklostezka-spojila-pisek-a-semice/

The reported coordinates of the project are in fact the following: 44°46'0.34"N, 11°49'40.58"E

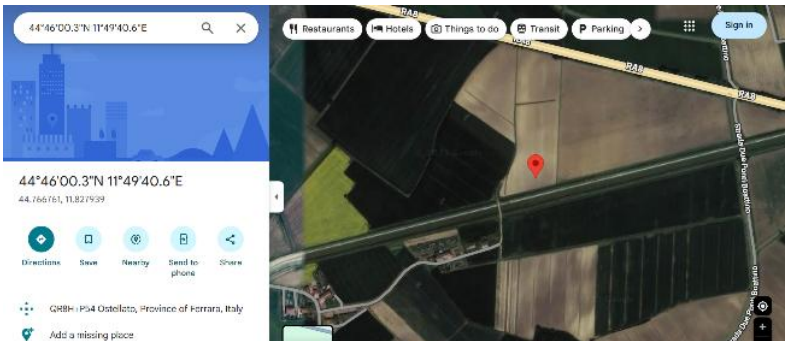


*Figure 30 – The reported project location. [(5_1)map1]*

These coordinates place the infrastructure within the confines of a private agricultural field, not in any proximity of cycling infrastructure. The reported project is instead located in Via Chiesa in San Martino (province of Ferrara), exactly one hour and ten minutes by bike, or 22.9 kilometres, from the reported intervention area.

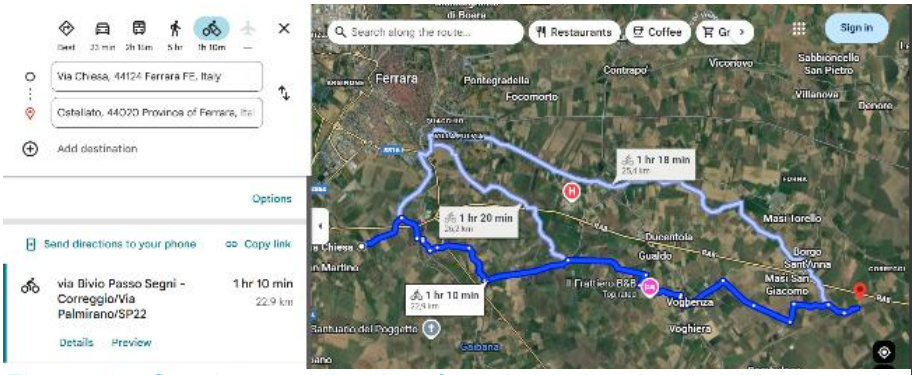


*Figure 31 – Google maps directions form the declared project location to the effective project location. [(5_1)map2]*

While geographic shortcomings are disclosed on the *Kohesio* portal webpage[86], this clearly inhibits the analytical value of the dataset. Not all cases show the same degree of inaccuracy: as reported, less extreme examples of misreporting lead to the indication of the beneficiary coordinates rather than the real area of intervention. However, this minor inaccuracy leads to the same result: the impossibility of reliably calculating the presence, quality and extension of reported infrastructure on a large-scale basis.


*Figure 32 – The foot-cycle path developed in Via Chiesa, San Martino. [(5_1)street1]*

[86] https://kohesio.eu/en/faq

# 6. Discussion

The combination of qualitative and quantitative findings reveals that the apparently normalised and uniform dataset is in fact populated by diverse projects that relate to the nomenclature of CIs 090, 043 and 083 to different degrees. This section contains a discussion of the causes of misreporting, a discussion of its consequences and a presentation of the three main framings used to present cycling investment.

The presented claims are grounded in data observation; however, we do not conceive them as a total explanation of the dataset. As explained in the beginning of this report, the qualitative section alone has the objective of providing overarching EU level data, while nuanced observations are limited to data that has been manually inspected or presented in the case study approach.

## 6.1 Misreporting causes

Within this subsection, the main causes of misreporting identified by this study are discussed. Capturing all patters of misreporting goes beyond the possibility of this study, but the most prevalent patterns within inspected data corresponded to:

- Format misreporting
- Content misreporting

### 6.1.1 Format misreporting

This refers to both willing and unwilling formatting issues that span throughout the dataset and hinder its transparency. Format misreporting can take three forms: first, it can consist of the repetition of a standardised sentence throughout all project reported under a CI; second, it can correspond to excessively long or vague project descriptions that inhibit the recognition of the cycling component; third, it can be the outcome of incorrect translations that distort the project description. While these practices primarily impact automated models of content analysis, they also negatively impact manual inspection.

The first instance of format misreporting has affected the development of the model used for this research. The country of Czechia has adopted a standardised reporting system that includes the mention of “renovation and construction of roads for pedestrians and roads for cyclists” in several declinations. While this would favour data clarity if associated to exclusively pedestrian and cycling investments, the fact that it is applied to other infrastructure inhibits the clarity of the dataset. As illustrated by cases (1_3) and (3_3) significant pedestrian and cycling investments have been implemented by the country. However, these risk being neglected when obfuscated by standardised descriptions that question the validity of reported data.

The second instance can take many forms. In some cases, projects have been listed with their policy or country specific name, leading them to be undetected by the model. Country specific project names are evidently not automatically translated in *Kohesio*, leading this misreporting instance to potentially cause confusion in manual inspection as

well. Moreover, project descriptions might contain a cycling component that is hidden within an excessively obscure, extensive or vague project description as in cases (0_2) and (0_3). In case (0_2) the project description is excessively vague and does not refer to pedestrian oriented investment. While the investment might in fact be there, there is no way to verify it as online data availability is scarce and reported geodata is inaccurate. Case (0_3) follows a similar pattern — while cycling is absent from the reported project description, triangulation confirmed that cycling investment is in fact present.

Lastly, the third instance is rather self-explanatory. As evidenced in the quantitative findings, some countries suffer from inadequate and wrongly formatted English translations that make the project descriptions illegible and the assignment of a Cycling Score impossible.

### 6.1.2 Content misreporting

Content misreporting refers to the practice of reporting projects that do not relate to their CI. This case is exemplified by case (0_1), the Ericeira Intermodal park. This project, reported under CI 090 bears no relevance to the cycle tracks and footpaths the CI should refer to.

Content misreporting also occurs across Cycling Scores 3 and 4. Data analysis has in fact demonstrated overlap between cycling and pedestrian oriented investments. In concrete terms, most of the cycling infrastructure is also open or targeted to pedestrians. This overlap can take many forms: as in case (3_3) it can refer to cycling projects that eventually open into a shared pedestrian-cycling area; as in case (4_3) it can refer to cycling infrastructure that is accessible to pedestrians in its entirety or; as in case (4_2) it can refer to cycling infrastructure that involved the development of pedestrian infrastructure as an ancillary.

Lastly, content misreporting is particularly affecting the registration of pedestrian projects in CI 083 as in case (1_3). This practice is likely caused by the absence of a pedestrian specific CI for the current financing period, leading to member states erroneously reporting pedestrian investment under the cycling exclusive CI.

## 6.2 Misreporting consequences

Misreporting has negative repercussions on the validity of the *Kohesio* dataset and data extracted from it. The two primary consequences are budget inflation and CI inconsistency.

### 6.2.1 CI budget inflation

CI budget inflation refers to the financial outcome of the discrepancy we have identified between CIs and projects they cover. Our analysis has identified three possible causes for this process:

- The inclusion of unrelated investments
- The presence of ancillary investments

- Reporting under multiple CIs

While the three are similar, the second tends to involve smaller, related or logical investments that “make sense” when developing the project yet still inflate the project’s estimated budget.

An extreme example of unrelated investment is explored in case (0_1), the Ericeira intermodal park. This development categorised as “cycle tracks and footpaths” involved a € 1.1 million investment targeted to the construction of public transport and motorized vehicle mobility. A minuscule partition of this investment effectively targeted cycling mobility, as only four bike racks were built as part of the project. Consequently, the Ericeira intermodal park has artificially inflated CI 090 EU contribution figures by approximately € 1.1 million.

Ancillary investments have lower yet significant effects on investment figures. By ancillary investments we mean investments in infrastructure that is not strictly related to the main objective of the project. Two examples of this are the renovation of communication cables and plumbing in case (1_2), and the relocation of CETIN communication cables in case (1_3). These investments are logical as underground infrastructure is often affected by surface level works and its renovation can contribute to the longevity of the infrastructure above. However, these interventions can amount to high expenses that inflate cycling investment figures.

Lastly, some countries report complex projects under multiple Categories of Intervention. While, as shown by case (0_3), components of the listed CIs are present in the project: there is no method of understanding what share of the total investment went in each CI. This leads to the inclusion of projects that may have cycling or walking components, but where these components absorb a minimal part of the total EU contribution in the calculation of financial figures of CIs 090, 043 and 083. The inclusion of such projects greatly distorts financial estimates.

### 6.2.2 CI inconsistency

A second major impact of misreporting is the inconsistency of CIs. The case study results confirm the quantitative findings in the identification of non-conform projects within CIs. This is particularly true for CI 083, where the rigid nomenclature “cycling infrastructure” allows for a greater possibility of disagreement between the CI and its content.

As explained in previous sections, CI 083 was introduced as a cycling specific Category of Intervention under the 2021-2027 financing period. This went to substitute the previous CI 090 – *cycle tracks and footpaths*. However, while the pedestrian component was removed form CI 083, no new category was established to indicate pedestrian oriented investments.

Cases (1_3) and (3_3) show that the pedestrian component is still overtly categorised under this newly established CI. Moreover, case (4_3) proves that even when not reported, cycling investments are still present as part of projects targeting CI 083 “cycling infrastructure”.

## 6.3 Framing of cycling investment

We conclude this discussion by overviewing the main modalities in which cycling investment is framed in the dataset. As mentioned above, establishing any theoretical explanation of cycling investment does not correspond to the objective of this report. However, identifying these frames corresponds to identifying potential opportunities for cycling investment to be further implemented and correctly reported.

Three modes of presenting cycling investment emerged from the brief presentation of case studies above.

- Giving the city back to its inhabitants
- Promoting cycling as a form of tourism
- Cycling as a component of intermodal networks

These presentations evidently do not capture all possible declinations of cycling infrastructure, as they are strictly based on the limited case studies presented in the qualitative section.

### 6.3.1 Giving the city back to its inhabitants

This refers to the common reporting of cycling (and pedestrian) initiatives as a means to return the urban fabric to its inhabitants. This is the case for projects as the pedestrianisation of Plaza de Angustias in case (1_1), the soft mobility corridor in Saint Herblain (case 3_1), the foot-bike footbridge over Struga street (3_2) or the cycling route in Michal na Ostrove (4_1).

Through these projects, areas of the city that were previously inaccessible or dangerous to cyclists and pedestrians are returned to the urban dwellers. This eliminates the reliance on motorized transport while contemporarily broadening the liveable city surface.

### 6.3.2 Promoting cycling as a form of tourism

This emerges in its strongest form in case (2_2). The project involves the development of a cycle route in the Polish municipality of Makow. Here, the infrastructure is framed as both being an enabler of mobility and a subject of tourism. As in this case, projects that frame the cycling infrastructure as a tourism-oriented effort often contain ancillary investments. These investments, as the development of angler sheds, birdwatching towers and playgrounds are not targeted to other mobility means, but to making the cycle route more palatable for users and tourists.

Other projects belonging to this framing, that are not mentioned in the content analysis, consist of the establishment and amelioration of EuroVelo or national cycling routes. In some cases, these routes are developed to intersect with major landmarks creating a valid alternative to motorised tourism.

### 6.3.3 Cycling as a component of intermodal networks

As shown by the analysis, a substantial portion of investments is absorbed by intermodal hubs and networks. As argued above, these projects tend to artificially inflate investment figures targeted to cycling. However, they also constitute a valid opportunity for

increasing the overall presence of cycling within EU investment. This is shown by the significant presence of cycling investment in CI 043. While part of this presence is due to reporting errors, it remains true that cycling infrastructure is often a relevant actor in multimodality.

The relevance of cycling in multimodality is shown by cases as (2_1). The P+R facility in Borovnica, developed to transition from individual to public transport, considers cycling as a relevant means of transportation. While looking at the amount of developed parking spots, car and bicycle parking spaces are quasi equal. While a bike parking evidently requires less space than car one, its significant inclusion (and the quality of infrastructure dedicate to it) constitutes a good practice example of cycling infrastructure inclusion within intermodally projects.

However, projects falling under this frame tend to greatly inflate cycling investment figure estimates. We therefore argue that it would be instrumental to develop a separate CI referring to this category of projects.

# 7. Conclusion and policy recommendations

## 7.1 Conclusion

This research is a first attempt to provide a fine-grained analysis of cycling investment in EU Structural Funds. By problematizing the integrity of reported Categories of Intervention, this research revealed significant inconsistencies and irregularities within the totality of reported projects. By not factoring in unrelated projects, the approach also provided accurate estimates of cycling investment amounting to € 6.8bn across the 2014-2027 timeframe.

Results from the qualitative analysis confirm the suspects raised by the quantitative overview: a part of projects categorised under CIs 090, 043 and 083 are in fact not related to cycling. While this is normal for what regards CI 043, presence of unrelated projects under CIs 090 and 083 is highly problematic as it does not coincide with their nomenclature.

As shown by case studies, projects can be miscategorised in a variety of ways:

- Cycling investments can be hidden behind excessively vague and imprecise project descriptions that inhibit their detection.
- They can be reported, overtly or covertly, with other investments that artificially inflate the CI investment figures.
- They might be completely unrelated to their CI, also artificially inflating its budget.

More specifically, the research found:

- Unrelated projects (score 0) detected in CI 090.
- Cycling and pedestrian oriented projects detected in CI 043.
- Unrelated, exclusively pedestrian or cycling and pedestrian targeted projects detected in CI 083.

Effectively, the problematics listed until now make the current system of nomenclature based on CIs undependable for the development of EU contribution estimates. While we recognise the limitations of the quantitative model, the detected number of unrelated projects within CIs 090 and 083, along with related ones in CIs 043, is too high to be ignored.

The implication for monitoring, reporting and transparency is clear: if CIs do not correspond to their content, it is necessary to either develop systems that rely on other information sources or improve the reporting system itself. Below, a list of policy recommendation is presented. These recommendations are ideal objectives: while we recognize their full obtainment is not realistic, each progress made towards their achievement would ameliorate the reliability and consistency of the intervention fields

and indicators presented in annex 1 of the European Commission proposal targeting the amelioration of expenditure tracking for the post-2027 MFF (COM/2025/545 final).[87]

## 7.2 Policy recommendations

Within this section we present policy recommendations targeting the three main actors of Structural Funds reporting: the EU authorities, member states, and managing authorities. Recommendations listed below derive from a combination of findings reported above and manual data inspection carried throughout the project. These recommendations point to ideal conditions, while we understand they may not be realisable in their totality any step towards their fulfilment would improve Structural Fund reporting. Please consider that what is denominated in the paper as CI following *Kohesio*'s lexicon, refers to "intervention fields" as described in MFF COM/2025/545 final[87].

### 7.2.1 Towards EU authorities and *Kohesio* staff

Four policy recommendations are hereby listed and explained in greater detail below:

*Table 13 – Policy recommendations towards EU authorities and Kohesio staff*

| **Policy recommendation** | **Content** |
|---|---|
| Implementation of a more sophisticated nomenclature system | The system should be sufficiently narrow to only include cycling investment and broad enough to include all its aspects. Intervention fields specific to multimodal transport and pedestrian investment should be included. |
| Adoption of a uniform reporting system | Project titling and description should be further standardised. |
| Definition of key terms | Key terms should be clearly and officially defined as to prevent misreporting from incorrect use of technical terms (e.g. *pavement*, *footbridge*). |
| Manual review of English translations | To prevent confusion from incorrect automated English translations, they should be manually reviewed. Alternatively, the translation software should be improved to handle technical terms correctly and avoid translating policy names or other fixed terms. |

[87] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025PC0545&qid=1753797488776

### *Implementation of a more sophisticated nomenclature system*

To address inflation of cycling oriented investment figures, a more sophisticated nomenclature system must be applied to Categories of Intervention (CIs). The current nomenclature for CI 083 (cycling infrastructure) is a positive step towards more accurate CIs however, if not paired to other CIs that target pedestrian and other investments, unrelated projects will continue diluting its contents. The development of more, narrowly focused CIs would allow for a more precise categorisation of projects and consequent estimation of investments.

To curb major budget inflation, a specific CI must be introduced for multimodal projects. These projects often entail a cycling and/or pedestrian component, but these absorb a negligible amount of the total investment that is often aimed at the construction of complex infrastructure. The inclusion of large, multimodality-oriented projects in CIs dedicated to cycling and walking majorly inflates their estimated EU contribution. We therefore recognise and support the inclusion of CIs dedicated to multimodality (513 and 514) listed in annex 1 ofCOM/2025/545 [88].

However, an excessive emphasis on narrowing nomenclature definitions can have unwanted collateral effects as demonstrated by CIs 090 and 083. These CIs respectively refer to cycle tracks and cycling infrastructure as object of cycling investment. By keeping a narrow, infrastructure-oriented focus, all ancillary investments including promotion of existing infrastructure, cycling education campaigns, bike sharing systems and other cycling initiatives do not match the CI nomenclature. We therefore suggest for the broadening of CIs dedicated to cycling for the post-2027 MFF, along with the creation of a pedestrian oriented CI that is currently absent.

The implementation of these elements is, in our view, essential to fulfilling the objective set out in Article 8(2) of the Commission's current proposal, that requires Member States to assign the intervention field (CI) that best reflects the substantive nature of the investment when reporting projects.

### *Adoption of a uniform reporting system*

Secondly, a uniform reporting system should be implemented for project titles and descriptions. While the current approach formally normalizes the dataset by organizing information into relevant columns, it allows excessive flexibility in how project-specific details are reported.

These descriptions must be standardized and limited strictly to project-related information. Ideally, only information about the cycling component of the project should be included and excessive contextualisation should be avoided. To achieve this goal, an additional column for the reporting of contextualisation could be added to the dataset. Alternatively, the setting of minimum and maximum character counts for project descriptions would curb the phenomena of excessively minimal or extensive project

[88] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025PC0545&qid=1753797488776

descriptions to the benefit of clarity. This could take the form of a minimum 100, maximum 200 word reporting system.

*Definition of key terms*

Thirdly, key terms should be formally defined to prevent misunderstandings caused by ambiguous or inconsistent language (e.g., “pavement,” “footbridge”). These terms, when presented in isolated manner, might be misleading as they are often presented with different meanings throughout the dataset. Establishing concrete definitions for infrastructure related terms or relying on already established definitions (as OSM data) would allow for better identification of the targets of investments. Alternatively, definitions from the UNECE recent publication “Definitions for cycling infrastructure”[89] can be used.

*Manual review of English translations*

Finally, English translations should undergo manual review to eliminate errors that inhibit project detection. In some cases, names of towns, projects and policies are erroneously translated to English creating false positives or false negatives in keyword detection. This also affects manual inspection, as incorrect translation impacts the clarity of project descriptions. Consequently, the provision of manually reviewed translations would contribute to making the dataset more transparent.

### 7.2.2 Towards member states and managing authorities

The reliability and accuracy of investment reporting can be ameliorated by member states and local managing authorities by autonomously adopting the corrections mentioned above. Additionally, as member states and managing authorities are responsible for reporting, they can autonomously improve the practice by implementing the measures listed below.

*Table 14 – Policy recommendations towards member states and managing authorities*

| **Policy recommendation** | **Content** |
|---|---|
| Provision of precise geodata | Precise geodata indicating projects’ location should be provided to enable their verification and tracking. |
| Provision of concise project descriptions | Excessively vague, extensive of concise project descriptions should be avoided. Narrow and to the point descriptions enable better legibility by large scale models and manual consultation. |
| Breakdown of multi-CI project into their components | Separately reporting investment components of larger multi-CI projects allows for more precise investment data calculation. Moreover, this measure would avoid artificial inflation of CI investment figures. |
| Improvement of project definition legibility | Member states should avoid utilizing special characters and inappropriate |

[89] https://unece.org/transport/publications/definitions-cycling-infrastructure

| | |
|---|---|
| | fonts in project descriptions as to avoid unreadable text in project descriptions. |

### *Provision of precise geodata*

First, member states and implementing agencies should provide more precise geodata. Currently, geographic coordinates are sometimes incorrect or absent. This inhibits verification of the presence or quality of infrastructure through automated comparison with OSM data and other geographic databases.

Including precise geodata would allow for a systematic comparison of reported and effective infrastructure. Moreover, it would allow for the confirmation of other quantitative figures as the total amount of cycling infrastructure developed (output indicator RCO58) in terms of length or surface.

### *Provision of concise project descriptions*

Second, we advise member states and managing authorities to provide concise descriptions when reporting policy initiatives and infrastructure projects.

Oftentimes, these initiatives are reported via a very short project description that does not contain any project information other than the specific policy name. This limits the recognition of cycling infrastructure both upon manual and automated inspection. In the first case, a non-expert in the field of cycling or policy would probably not recognise the policy initiative reported on *Kohesio.* In the second case, the automated model would not detect the cycle investment in the eventuality it was not listed in the codebook.

Including a brief but precise project description including its target and its content would allow for better understanding of the reported project and better aggregate analysis of the dataset. This could be complemented by the establishment of a minimum and maximum word count for project descriptions (min.100 max.200). The latter would increase the uniformity of the dataset and prevent excessively short (non-informative) or long (unrelated) descriptions.

### *Breakdown of multi-CI projects in their components*

Third, we advise against the implementation of multi-CI reporting in its current form.

As explained above, reporting projects under more than one Category of Intervention artificially inflates the budget of any given CI by including elements that do not relate to it. Moreover, this reporting system offers no possibility of identifying what share of the total investment figure is targeted to any given category.

To curb this issue, we suggest breaking down multi-CI projects into their category specific components, reporting the individual component as separate project under the relevant CI. Alternatively, multi-CI reporting can be complemented by the indication of the percentage dedicated to every CI component in the project description or a dedicated data field.

*Improvement of project description legibility*

Fourth, we advise against the use of special and unreadable characters that inhibit the clarity of the project description. An example of this practice can be found by consulting Italian project descriptions, that are consistently reported in caps throughout the dataset. This practice, when applied to letters with accents, creates unreadable characters that compromise legibility. Avoiding the use of special characters in project descriptions would therefore improve the transparency of the dataset.

# 8. Limitations and suggestions for further research

## 8.1 Limitations

As stated in the methodology section, this research suffers from the limitations any strict content analysis: the lack of understanding of context and the reliance on its codebook. As illustrated by the case study approach, projects may relate to cycling to varying degrees depending on the context, cause and objective of their implementation. Moreover, due to its reliance on strict keyword identification, the automated content analysis model cannot provide insight into the degree to which cycling is present within project description. This is particularly true for Cycling Score 3, where to avoid under detection of cycling investment the keyword tag *ped_cycle* was given higher weight.

Secondly, the dependency of the model on its codebook does not allow for the identification of wrongly formatted terms and limits the recognition of specific policy, national language or abbreviated terms.

Lastly, case studies presented in this report give some insight into the misreporting practices enacted by member states and managing authorities. However, a more systematic and country specific analysis of these practices must be developed to provide more refined guidance to individual member states.

## 8.2 Further research suggestions

A more systematic overview of misreporting practices can provide better guidance to individual member states on how to curb misreporting of EU Structural Funds. This research could take the form of a qualitative case study approach of a larger sample of projects covering all EU member states.

The quantitative aspect of this research can be improved by introducing more refined logics that add to or substitute the three that are currently implemented. These logics should be targeted to curbing errors induced by misreporting patterns and derived from the findings of the improved qualitative approach mentioned above.

Lastly, the inclusion of a greater number of Cycling Scores would increase the accuracy of the financial estimates. Cycling Scores had to be limited to 5 for this study to ensure reliability however, with more refined logics and improvements in the *Kohesio* dataset, more fine-grained Cycling Scores can be implemented. This would allow for the removal of *other* keywords from Cycling Scores 1 and 3 yielding precise estimates of exclusive pedestrian and cycling-pedestrian investments.

*Table 15 – Table of abbreviations*

| **Abbreviation** | **Meaning** |
|---|---|
| ERDF | European Regional Development Fund |
| CF | Cohesion Fund |
| MFF | Multiannual Financial Framework |
| CI | Category of Intervention (also known as Intervention Field) |
| CS | Cycling Score |

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