# Appendix J. Qualitative Comparative Analysis (QCA) – full findings

*The two following chapters illustrate the QCA findings, per each thematic area (trafficking in human beings (THB) and cybercrime (C-C)). In consideration of the in-depth analysis contained in each of these chapters, we imagine that some readers would prefer to focus mainly on the one area of their primary interest.*

*For this reason, and to the benefit of readers that will read only one of these chapters, some notes aimed at clarifying how to read and interpret QCA data are repeated in both chapters.*

## 1. Trafficking in human beings

As discussed in Appendix D (Methodology), the QCA aims to test one outcome resulting from the Theory of Change of the programme/intervention under evaluation, understanding the relative contribution of different conditions to the materialisation of the outcome in terms of their necessity and sufficiency.

In the area of trafficking in human beings, the outcome that we tested was the following one:

- The effect of the Council of Europe monitoring in the area of trafficking in human beings, reinforced by the presence of other conditions, leads to the alignment of national legislation to the standards of Convention #197, by state parties.

A total of **30 countries** (cases) were considered for this test.

| | | | | |
|---|---|---|---|---|
| Armenia | Czech Republic | Hungary | Republic of Moldova | Slovak Republic |
| Austria | *Denmark* | Iceland | Netherlands | Spain |
| Azerbaijan | Finland | Ireland | *Norway* | *Sweden* |
| Bosnia and Herzegovina | France | Italy | Portugal | Switzerland |
| Bulgaria | Georgia | Luxembourg | Romania | Türkiye |
| *Croatia* | Germany | *Malta* | *San Marino* | Ukraine |

Reportedly, legislative change was achieved in 24 countries (80.0% of the sample) and was not achieved in 7 countries (20.0%, *in italics in the previous list*).

These countries have two characteristics in common: they are all parties of Convention #197, and they have all been monitored by GRETA at least once after their ratification.

The QCA considered the presence or absence in each country of the following 10 factors (or conditions) in the three years preceding the most recent legislative change:

*Table 1 – QCA – conditions considered in THB*

| Full name condition | Description | Short name |
|---|---|---|
| **Extra-monitoring pressure Council of Europe** | Pressure for legislative change made by the Commissioner for Human Rights (data from 2015 on) | Press-CoE |
| **Pressure from other organisations** | Advocacy for change exerted by other international organisations/institutions to align legislation to the THB Convention | Press-oth |
| **Case law of the Court** | Relevant case law of the Court | Court |
| **EU traction** | EU member states: obligations deriving from the EU membership<br>EU candidate countries: obligations deriving from the pre-accession process | EU-tract |

| Full name condition | Description | Short name |
|---|---|---|
| **Media pressure** | Media coverage of domestic issues linked with the trafficking in human beings | Media |
| **Civil society pressure** | Pressure from civil society to national authorities to take measures to put an end to trafficking in human beings | Civ-soc |
| **Private sector pressure** | Pressure from the private sector to national authorities to take measures to put an end to trafficking in human beings | Pri-sec |
| **Inclusion in national policies** | Adoption of measures to put an end to trafficking in human beings included in the government's agenda | Nat-pol |
| **Presence in majority agenda** | Measures to put an end to trafficking in human beings included in the political agenda of the leading party/coalition | Maj-ag |
| **Presence in opposition agenda** | Measures to put an end to trafficking in human beings included in the political agenda of the opposition party/coalition | Opp-ag |

The two conditions, "Extra-monitoring pressure Council of Europe" [1] and "Case law of the Court" [2] are specific to the QCA test in the area of trafficking in human beings. The other eight conditions are shared with the test run on cybercrime.

As described in previous chapter, there is significant evidence that in some cases co-operation projects contributed to legislative change. However, we could not include this condition in the QCA as relevant data were available only for Bosnia and Herzegovina, and Türkiye. Including this condition in the QCA test would not have been significant and have created an unjustified bias against co-operation projects, which we wanted to prevent.

The following text shows that in addition to the monitoring work of GRETA, several conditions contribute to legislative change and that the combination of some of them is necessary to achieve this outcome.

The most relevant of these conditions are pressure from other organisations, civil society pressure, EU traction, inclusion in national policies and media pressure. In the cases the evaluation team analysed, they combine differently to achieve success, and the more promising combination of conditions is pressure from other organisations and civil society pressure or inclusion in national policies.

The database (raw data table) that was developed to describe the presence or absence of each of these conditions is included in the Table 2.

The first two columns contain the full name and the ISO code of the 30 countries.

Throughout the table, "1" means "Yes", and "0" means "No".

The last column (in light blue) contains the outcome we tested: "1" means a legislative change was reported; "0" means that it was reported that legislative change did not happen.

The 10 intermediate columns report each condition's presence (1) or absence (0).

[1] This was not included in the QCA C-C test because not relevant (no extra-assessment pressure found in the area of C-C).

[2] This was not included in the QCA C-C test because not relevant (no C-C-relevant case law of the Court found).

*Table 2 – QCA THB – raw data table (sorting: alphabetical order, per country full name)*

| Country | Country-ISO | Press-CoE | Press-oth | Court | EU-tract | Media | Civ-Soc | Pri-Sec | Nat-pol | Maj-ag | Opp-ag | LEG-CHANGE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Armenia | ARM | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| Austria | AUT | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| Azerbaijan | AZE | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Bosnia and Herzegovina | BIH | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| Bulgaria | BGR | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| Croatia | HRV | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| Czech Republic | CZE | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Denmark | DNK | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Finland | FIN | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| France | FRA | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| Georgia | GEO | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Germany | DEU | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| Hungary | HUN | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Iceland | ISL | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| Ireland | IRL | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| Italy | ITA | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Luxembourg | LUX | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Malta | MLT | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| Republic of Moldova | MDA | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Netherlands | NLD | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| Norway | NOR | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| Portugal | PRT | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| Romania | ROU | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| San Marino | SMR | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Slovak Republic | SVL | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| Spain | ESP | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sweden | SWE | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Switzerland | CHE | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Türkiye | TUR | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| Ukraine | UKR | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |

A first-level analysis of the raw data reveals the recurrence of different conditions is uneven and there is no condition that is always present in all successful cases. Thus, not allowing identification of a single condition that is sufficient to explain the legislative change, in addition to the monitoring work conducted by the Council of Europe.

In other words, it reveals that combining several conditions is necessary to achieve the change. This is a confirmation of what was affirmed by the QCA method's creator and of what every operator in the social and legal sphere knows well based on practical experience.

To understand the relevance of each condition, we considered all of them in terms of the following:

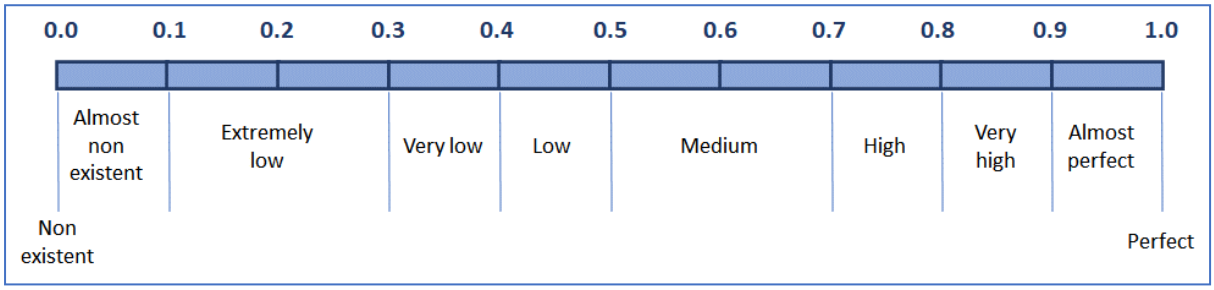
- **Necessity**: to what extent is each condition necessary for the legislative change? This has been expressed with a necessity-consistency coefficient (Ncon) from 0.0 (no necessity) to 1.0 (perfect necessity, i.e. if the outcome occurs, the condition is present).

- **Sufficiency**: to what extent is each condition sufficient for the legislative change to happen? This has been expressed with a sufficiency-consistency coefficient (Scon) from 0.0 (no sufficiency) to 1.0 (perfect sufficiency, i.e. if the condition is present, then the outcome occurs).
- **Coverage**: how many cases are "covered" by each positive condition? This has been expressed with a coverage coefficient (Cov) from 0.0 (no coverage) to 1.0 (perfect coverage, i.e. the condition is present in all tested cases -positive or negative).[3]

The result of this analysis is reported in Table 3, which contains the mathematics used to derive the coefficients, the derived coefficients and their descriptive definition per condition.

For a better understanding of "what numbers tell us", the descriptive definition of the coefficients uses adjectives to indicate their relative necessity, sufficiency and coverage (e.g. almost perfect sufficiency, low necessity, medium coverage etc.). The use of these adjectives is explained in the following Figure 1.

*Figure 1 – Meaning of the necessity, sufficiency and coverage coefficients*




[3] We preferred to perform this simplified coverage analysis rather than conducting a more traditional analysis of two distinct elements: the necessity-coverage and the sufficiency-coverage. This more complex analysis (which is mainly conducted in academic research) would have made even more complex the 'reading' of the results.

*Table 3 – QCA THB – analysis of necessity, sufficiency and coverage (individual factors)*

| Full name condition | Necessity-consistency analysis[4] and Ncon coefficient | Sufficiency-consistency analysis[5] and Scon coefficient | Coverage analysis[6] and Cov coefficient | Conclusions |
|---|---|---|---|---|
| **Pressure from other organisations** | Condition present in 23 successful cases over 24<br>• Ncon: 23/24 = 0.958 | Condition present in 27 cases, out of which 23 successful<br>• Scon 23/27 = 0.851 | Condition present in 27 cases out of 30 overall cases<br>• Cov 27/30 = 0.900 | • Almost perfect necessity<br>• Very high sufficiency<br>• Almost perfect coverage |
| **Civil society pressure** | Condition present in 22 successful cases over 24<br>• Ncon: 22/24 = 0.916 | Condition present in 28 cases, out of which 22 successful<br>• Scon 22/28 = 0.785 | Condition present in 28 cases out of 30 overall cases<br>• Cov 27/30 = 0.933 | • Almost perfect necessity<br>• High sufficiency<br>• Almost perfect coverage |
| **EU traction** | Condition present in 20 successful cases over 24<br>• Ncon: 20/24 = 0.833 | Condition present in 24 cases, out of which 20 successful<br>• Scon 20/24 = 0.833 | Condition present in 24 cases out of 30 overall cases<br>• Cov 24/30 = 0.800 | • Very high necessity<br>• High sufficiency<br>• Very high coverage |
| **Inclusion in national policies** | Condition present in 20 successful cases over 24<br>• Ncon: 20/24 = 0.833 | Condition present in 26 cases, out of which 20 successful<br>• Scon 20/26 = 0.769 | Condition present in 26 cases out of 30 overall cases<br>• Cov 24/30 = 0.866 | • Very high necessity<br>• High sufficiency<br>• Very high coverage |
| **Media pressure** | Condition present in 16 successful cases over 24<br>• Ncon: 16/24 = 0.666 | Condition present in 21 cases, out of which 16 successful<br>• Scon 16/21 = 0.761 | Condition present in 21 cases out of 30 overall cases<br>• Cov 24/30 = 0.700 | • Medium necessity<br>• High sufficiency<br>• High coverage |

[4] Expressed as a necessity-consistency coefficient from 0 (no necessity) to 1 [perfect necessity, id est if the outcome occurs (value 1), the condition is present (value 1)].
[5] Expressed as a sufficiency-consistency coefficient from 0 (no sufficiency) to 1 [perfect sufficiency, id est if the condition is present (value 1), then the outcome occurs (value 1)].
[6] Expressed as a coverage coefficient from 0 (no coverage) to 1 [perfect coverage, id est the condition is present (value 1) in all tested cases (values 0 and 1)].

| Full name condition | Necessity-consistency analysis[4] and Ncon coefficient | Sufficiency-consistency analysis[5] and Scon coefficient | Coverage analysis[6] and Cov coefficient | Conclusions |
|---|---|---|---|---|
| **Presence in majority agenda** | Condition present in 10 successful cases over 24<br>• Ncon: 10/24 = 0.416 | Condition present in 12 cases, out of which 10 successful<br>• Scon 10/12 = 0.833 | Condition present in 12 cases out of 30 overall cases<br>• Cov 12/30 = 0.400 | • Low necessity<br>• Very high sufficiency<br>• Low coverage |
| **Private sector pressure** | Condition present in 9 successful cases over 24<br>• Ncon: 9/24 = 0.391 | Condition present in 12 cases, out of which 9 successful<br>• Scon 9/12 = 0.750 | Condition present in 12 cases out of 30 overall cases<br>• Cov 12/30 = 0.400 | • Very low necessity<br>• High sufficiency<br>• Low coverage |
| **Presence in opposition agenda** | Condition present in 9 successful cases over 24<br>• Ncon: 9/24 = 0.391 | Condition present in 12 cases, out of which 9 successful<br>• Scon 9/12 = 0.750 | Condition present in 12 cases out of 30 overall cases<br>• Cov 12/30 = 0.400 | • Very low necessity<br>• High sufficiency<br>• Low coverage |
| **Extra-monitoring pressure Council of Europe** | Condition present in 7 successful cases over 24<br>• Ncon: 7/24 = 0.291 | Condition present in 10 cases, out of which 7 successful<br>• Scon 7/10 = 0.700 | Condition present in 10 cases out of 30 overall cases<br>• Cov 10/30 = 0.333 | • Extremely low necessity<br>• Medium sufficiency<br>• Very low coverage |
| **Case law of the Court** | Condition present in 3 successful cases over 24<br>• Ncon: 3/24 = 0.125 | Condition present in 4 cases, out of which 3 successful<br>• Scon 3/4 = 0.750 | Condition present in 4 cases out of 30 overall cases<br>• Cov 4/30 = 0.133 | • Extremely low necessity<br>• High sufficiency<br>• Extremely low coverage |

This analysis shows that, in the case of THB, the conditions can be aggregated into two groups:

- **Highly relevant conditions**, characterised by minimum three factors among necessity, sufficiency and coverage scoring at least high: pressure from other organisations, civil society pressure, EU traction, inclusion in national policies, media pressure.
- **Scarcely relevant conditions** are characterised by low, very low or extremely low necessity and coverage: presence in majority agenda, private sector pressure, presence in opposition agenda, extra-monitoring pressure Council of Europe,[7] case law of the Court. The inadequate coverage of conditions in this group (from 0.133 to 0.400) makes them scarcely relevant, even despite their high sufficiency. Therefore, none of them scores positively in terms of sufficiency.

We focussed on the conditions of the first group while adding some footnotes commenting on the most prominent aspects of two of the conditions of the second group.

- **Pressure from other organisations** is an almost perfectly necessary condition (Ncon=0.958), very highly sufficient (Scon=0.851) and had an almost perfect coverage (Cov=0.900). It witnesses the very high standing of the Council of Europe in the area of trafficking in human beings: other organisations endorse the standards set by the Council of Europe and put pressure on their partner countries to convince them to align their legislation. They market the convention on behalf of the Council of Europe. As all this is not a given, it also witnesses the capacity of the Council of Europe to create links of collaboration, partnership and trust with other organisations.
- **Civil society pressure** is almost a perfectly necessary condition (Ncon=0.916), that is highly sufficient (Scon=0.785) and had an almost perfect coverage (Cov=0.933). Civil society is active at the national level in advocating for measures to contrast the phenomenon of trafficking in human beings, and national institutions have felt their pressure. Their advocacy role may be completely independent from the Council of Europe or linked with the Organisation's work: the situation may differ from Country to country. Nevertheless, they are natural partners of the Council of Europe in this field.
- **EU traction** is a very highly necessary condition (Ncon=0.833), that is highly sufficient (Scon=0.833) and has a very high coverage (Cov=0.800). The EU is a crucial partner of the Council of Europe and recognises the value of the Convention on THB: the EU Directive 2011/36/EU of 5 April 2011 recognises the Council of Europe's Convention on THB is a crucial step "*in the process of enhancing international co-operation against trafficking in human beings*." It furthermore acknowledges the existence of the specific monitoring mechanism of the convention. It supports "*Co-ordination between international organisations with competence concerning action against trafficking in human beings […] to avoid duplication of effort*." EU member states are bound to ensure respect of the Directive. Adopting measures to combat human trafficking is part of the negotiation process for EU candidate countries.
- **Inclusion in national policies** is to be regarded both as an objective of the Council of Europe initiatives (one of the three elements of the intermediate outcome of the Organisation's initiatives in THB) and a condition for legislative change. As such, it is a very highly necessary condition (Ncon=0.833), highly sufficient (Scon=0.769) and has a very high coverage (Cov=0.866). Moreover, when present, it reveals the commitment of the national institutions to embark on the path of reform.
- **Media pressure**. Less relevant than the previous conditions, it scores in any case as a medium-necessity condition (Ncon=0.666), highly sufficient (Scon=0.761) and with high coverage (Cov=0.700). In the cases we analysed, from time to time, media covered issues on human

[7] The main reason for the inclusion in this group of the conditions Extra-monitoring pressure Council of Europe and case law of the Court is their very limited number. There are no reasons to believe that in the limited number of cases where they were present, they had no impact on legislative change, but unfortunately their number is so limited that a valid counterfactual analysis could not be attempted.

trafficking, and not necessarily this put in relation to the initiatives of the Council of Europe – even if some coverage of the GRETA monitoring missions was reported during interviews.

The use of specialised software allowed us to identify a series of 11 different "pathways to change".[8] Those are combinations of different factors present in the cases where the legislative change was achieved.

All countries where legislative change materialised were considered, but one: Italy. This was because the truth table of this QCA test identified Italy and Sweden as contradictory cases: they had the same series of positive and negative conditions, but the outcome was the opposite in that Italy achieved legislative change while Sweden did not. The presence of only two contradictory cases out of such a broad sample confirms the validity of the QCA method.

To represent the different pathways to change (solutions or results in the QCA jargon) in an understandable way, we produced the following Table 5, which uses a traffic-light system.

The first columns represent the conditions, and each row represents a different possible solution resulting from the QCA test.

The cells at the crossing of the first columns with the rows can have three different values; the following Table 4 defines their meaning:

*Table 4 – QCA, results table: the traffic light system*

| | |
|---|---|
| PRES. | The presence of the condition was necessary to achieve change in this solution |
| abs. | The presence of the condition was not necessary to achieve change in this solution (it was absent) |
| --- | The presence or absence of the condition was irrelevant to achieve change in this solution |

Every row represents a conjunction of different conditions to get to the result. This is expressed in Boolean algebra with the logical operator AND (or ^). In the QCA notation, this is represented as * (asterisk), which is used in the following table between every two conditions.

The last but one column "Validity" reports the ISO code of the countries where this result was found; it contains a validity (or recurrence) coefficient, expressed in a percentage format. Finally, a footnote specifies the formula that was used to extract this coefficient.

The last column indicates how many conditions contributed to change, either because of their presence or absence. Therefore, it excludes these conditions that were irrelevant (yellow cells). Excluding the irrelevant conditions is a powerful feature of the QCA method, known as Boolean minimisation or Quine-McCluskey algorithm: "*it pairs combinations in the Truth Table based on their similarity and replaces two similar combinations with a simpler one sharing the conditions they have in common. The algorithm operates by merging two combinations of a Truth Table sharing the outcome and all conditions except one (the "one-difference rule"), into a simpler combination presenting all the identical conditions (and the same outcome) but not the different conditions*."[9]

The employment in QCA of the Boolean minimisation brings to the apparently strange phenomenon that one country could be present in more than one possible result. It is the case of the Czech Republic, which is included in the second (where the condition "case law of the Court" was irrelevant) and the third result (where the condition "pressure from other organisations" is irrelevant).

[8] In order to get to the different solutions, a "QCA truth table" was produced. The truth table is based on the raw data table and groups together similar cases as combinations of conditions that are sufficient for the outcome.

[9] Barbara Befani, quoted.

*Table 5 – QCA THB, tested results*

| Press-CoE | | Press-oth | | Court | | EU-tract | | Media | | Civ-soc | | Pri-sec | | Nat-pol | | Maj-ag | | Opp-ag | *Validity* | *Conditions* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| abs. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | --- | * | --- | * | abs. | * | abs. | *BIH, ROU, FRA, MDA, UKR* | *8* |
| PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | --- | * | --- | *DEU, BGR* | *8* |
| abs. | * | PRES. | * | --- | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | *AZE, CHE* | *9* |
| --- | * | PRES. | * | abs. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | abs. | * | abs. | * | abs. | *CZE, HUN* | *9* |
| abs. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | --- | * | abs. | * | abs. | * | abs. | * | abs. | *CZE, LUX* | *9* |
| abs. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | --- | *FIN, PRT, TUR* | *9* |
| abs. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | --- | * | PRES. | * | PRES. | * | PRES. | *GEO, ESP, NLD* | *9* |
| PRES. | * | PRES. | * | abs. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | *ARM* | *10* |
| PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | abs. | * | abs. | * | PRES. | * | PRES. | * | abs. | *AUT* | *10* |
| abs. | * | abs. | * | abs. | * | abs. | * | abs. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | abs. | *ISL* | *10* |
| abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | *SVL* | *10* |

The analysis of the findings of this test could last forever and gives compelling indications. We reflect only on two key emerging issues, and we are sure that the sector operators will find additional and equally important elements of reflection.

- We have discussed the almost perfect necessity and very highly sufficiency of the condition "pressure from other organisations"; the table shows that when combined with civil society pressure or with inclusion in national policies it creates a situation of absolute necessity (their combined Ncon coefficient would be 1.0), even in the absence of all the other conditions. We also explained that the inclusion in national policies is, at the same time, one intermediate outcome (before legislative change) and an important condition for legislative change. The civil society pressure is the second most necessary condition, and, as such, it very much complements the effects of the pressure from other organisations. All this confirms that it is in the interest of the Council of Europe to consolidate and reinforce its partnership with other organisations and civil society. Such a tripartite partnership could have a reinforcing factor of achieving the inclusion in national policies of the desired change, and the continuing pressure of the monitoring mechanism of the Council of Europe, other organisations and civil society even after the inclusion of the desired objective in national policies could have an important effect on legislative change.
- Legislative change materialised in 14 cases of the presence of inclusion in national policies; Inclusion in national policies was irrelevant in five cases, and in four cases, change materialised even in the absence of inclusion in national policies. Therefore, it might make sense to understand the most relevant conditions to get to inclusion in national policies. We ran a further QCA test by considering inclusion in national policies as the expected outcome (instead of legislative change). The results show that the presence of both pressure from other organisations and civil society pressure covers all cases where inclusion in national policies was achieved (full necessity). See the Truth table from this test in Figure 3. However, this test had 10 contradictions and, thus, should be taken with precaution. What can be brought home from this further test? Two elements: i) legislative change happens more easily when inclusion in national policies is achieved; ii) it could be appropriate to consider the modification of the Theory of Change of THB by including inclusion in national policies as a precursor of legislative change to test the validity of this assumption.

*Figure 2: Truth table THB: Inclusion in national policies as desired outcome*

| Country-ISO | Press-oth | Court | EU-tract | Media | Civ-Soc | Pri-Sec | Maj-ag | Opp-ag | Nat-pol |
|---|---|---|---|---|---|---|---|---|---|
| ISL | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| SMR | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| DNK | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| HRV | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 |
| NOR | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 |
| ARM | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |
| CHE | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| LUX | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CZE(0), HUN(0), PRT(1), TUR(1) | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | C |
| FIN | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| BIH(1), BGR(1), FRA(0), ROU(1) | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | C |
| DEU | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| MLT | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| IRL, NLD | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| MDA(1), UKR(0) | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | C |
| GEO, ITA, ESP, SWE | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AZE | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| AUT | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| SVL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |

- **EU traction** is an extremely relevant factor, and we have already discussed the strategic importance of the Council of Europe to nurture its partnership with the EU. However, this condition applies to a limited number of countries (even if large). The pressure from other organisations, civil society pressure and media pressure appear to be the three most relevant conditions in cases where EU traction is not present, thus reinforcing the previous suggestions (to consolidate co-operation with other organisations and civil society) and suggesting furthering relations with media.

## 2. Cybercrime

As previously discussed, the QCA aims to test one outcome resulting from the Theory of Change of the programme/intervention under evaluation, understanding the relative contribution of different conditions to the materialisation of the outcome in terms of their necessity and sufficiency.

In the area of cybercrime, the outcome that we tested was the following one:

- The combined effects of the Council of Europe assessment and its technical co-operation in the area of cybercrime, reinforced by the presence of other conditions, lead to the alignment of national legislation to the standards of the Budapest Convention – by state parties and observers.

Data were gathered on **41 countries** (cases).

| | | | |
|---|---|---|---|
| Albania | Dominican Republic | Republic of Moldova | Senegal |
| *Argentina* | Finland | Monaco | Serbia |
| Armenia | France | Morocco | Slovak Republic |
| Austria | *Germany* | * New Zealand | Slovenia |
| Bosnia and Herzegovina | Ghana | * Niger | * South Africa |
| * Brazil | Greece | Nigeria | Spain |
| Bulgaria | Japan | *Panama* | Switzerland |
| * Burkina Faso | Liechtenstein | Paraguay | Tonga |
| Cabo Verde | Malta | Philippines | * Tunisia |
| *Costa Rica* | Mauritius | Portugal | Türkiye |
| | | | Ukraine |

From 41 countries, 35 are parties to the convention (85.3%), and 6 are observers (14.7%); these latter countries are marked with an asterisk (*) before their name.

Reportedly, legislative change was achieved in 37 countries (90.2% of the sample) and was not achieved in 4 countries (9.8%, *in italics in the previous list*).

The QCA considered the presence or absence in each country of the following 10 factors (or conditions) in the three years preceding the most recent legislative change:[10]

*Table 6 – QCA – conditions considered in C-C*

| Full name condition | Description | Short name |
|---|---|---|
| **Assessment Council of Europe** | Country included in the last T-CY assessment report (on the Implementation of Article 13 of the Budapest Convention on sanctions and measures, adopted in 2017) | Ass-CoE |

[10] Unless otherwise specified

| Full name condition | Description | Short name |
|---|---|---|
| **Pressure from other organisations** | Advocacy for change exerted by other international organisations/institutions to align legislation to the Cybercrime Convention | Press-oth |
| **Co-operation with the Council of Europe** | Co-operation projects with the Council of Europe ongoing during the period covered by the evaluation | Co-op-CoE |
| **EU traction** | EU member states: obligations deriving from the EU membership; EU candidate countries: obligations deriving from the pre-accession process | EU-tract |
| **Media pressure** | Media coverage of domestic issues linked with C-C | Media |
| **Civil society pressure** | Pressure from civil society to national authorities to take measures to fight C-C | Civ-soc |
| **Private sector pressure** | Pressure from the private sector to national authorities to take measures to fight C-C | Pri-sec |
| **Inclusion in national policies** | Adoption of measures to fight C-C included in the government's agenda | Nat-pol |
| **Presence in majority agenda** | Measures to fight C-C included in the political agenda of the leading party/coalition | Maj-ag |
| **Presence in opposition agenda** | Measures to fight C-C included in the political agenda of the opposition party/coalition | Opp-ag |

The two conditions, "Assessment Council of Europe"[11] and "Co-operation with the Council of Europe"[12] are specific to the QCA test in the area of cybercrime. The further eight conditions are common with the test run on THB.

The QCA reveals that the assessment done by the Council of Europe and the technical co-operation with the Council are very relevant conditions but not sufficient per se to achieve legislative changes. It also reveals that no condition is always present in all successful cases and that combining different conditions is necessary to achieve legislative change.

The most relevant conditions to support the effects of assessment and co-operation emerge as media coverage and inclusion in national policies. The change was also achieved in the absence of either assessment or co-operation. In these cases, the most relevant conditions facilitating change were confirmed to be media pressure and inclusion in national policies supported by pressure from Civil society, pressure from the private sector and pressure from other organisations.

EU traction is a very relevant condition for EU member states and candidate countries. In this case, the most important allies to achieve change are assessment made by the Council, media pressure and inclusion in national policies.

The database (raw data table) that was developed to describe the presence or absence of each of these conditions is included in Table 7.

The first two columns contain the full name and the ISO code of the 30 countries. The third column indicates whether a Country is a Party of the Budapest Convention (P) or an Observer (O).

Throughout the table, "1" means "Yes", and "0" means "No".

[11] This was not included in the QCA THB test because all considered countries have been monitored by the Council of Europe.

[12] This was not included in the QCA THB test because of the very little coverage of this condition, which would have led to negative bias in the test.

The last column (in light blue) contains the outcome we tested: "1" means a legislative change was reported; "0" means that it was reported that legislative change did not happen.

The 10 intermediate columns report each condition's presence (1) or absence (0).

*Table 7 – QCA C-C – raw data table (sorting: alphabetical order, per country full name)*

| Country | Country-ISO | P/O | Ass-CoE | Press-oth | Co-op-CoE | EU-tract | Media | Civ-Soc | Pri-Sec | Nat-pol | Maj-ag | Opp-ag | LEG-CHANGE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albania | ALB | P | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Argentina | ARG | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Armenia | ARM | P | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Austria | AUT | P | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| Bosnia and Herzegovina | BIH | P | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| Brazil | BRA | O | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| Bulgaria | BGR | P | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Burkina Faso | BFA | O | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| Cabo Verde | CPV | P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Costa Rica | CRI | P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Dominican Republic | DMA | P | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| Finland | FIN | P | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 |
| France | FRA | P | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| Germany | DEU | P | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Ghana | GHA | P | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| Greece | GRC | P | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Japan | JPN | P | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Liechtenstein | LIE | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Malta | MLT | P | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| Mauritius | MUS | P | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| Republic of Moldova | MDA | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Monaco | MCO | P | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| Morocco | MAR | P | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| New Zealand | NZL | O | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| Niger | NER | O | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nigeria | NGA | P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Panama | PAN | P | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Paraguay | PRY | P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Philippines | PHL | P | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Portugal | PRT | P | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Senegal | SEN | P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Serbia | SRB | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Slovak Republic | SVK | P | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Slovenia | SVN | P | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| South Africa | ZAF | O | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Spain | ESP | P | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Switzerland | CHE | P | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Tonga | TON | P | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tunisia | TUN | O | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| Türkiye | TUR | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ukraine | UKR | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |

As it was already the case for THB, the first-level analysis of the raw data reveals that the recurrence of the different conditions is uneven and that no condition is always present in all successful cases. Thus, a single condition could not be identified that is sufficient to explain the legislative change. Differently said, it confirms the intuition of the creator of the method QCA that the combination of several conditions is necessary to achieve the change – which corresponds to what sector operators know very well.

It also reveals that the assessment and co-operation are very relevant conditions but not sufficient per se to achieve change: it is a direct confirmation of the good foundation of the outcome we wanted to test: "*the combined effects of the Council of Europe assessment and its technical co-operation in the area of cybercrime, reinforced by the presence of other conditions, lead to the alignment of national legislation to the standards of the Budapest Convention – by state parties and observers*."

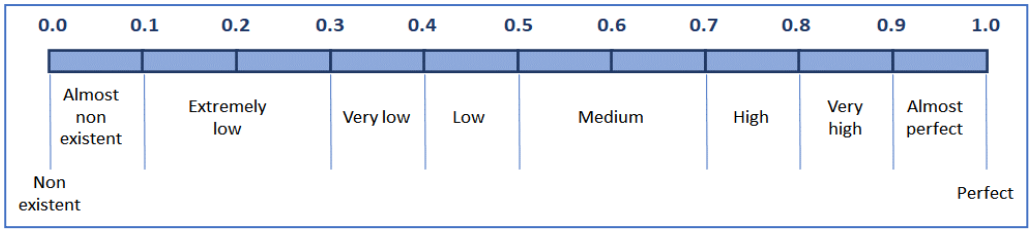
To better understand the importance of each condition, we considered all of them in terms of the following:

- **Necessity**: to what extent is each condition necessary for the legislative change? This has been expressed with a necessity-consistency coefficient (Ncon) from 0.0 (no necessity) to 1.0 (perfect necessity, i.e. if the outcome occurs, the condition is present).
- **Sufficiency**: to what extent is each condition sufficient for the legislative change to happen? This has been expressed with a sufficiency-consistency coefficient (Scon) from 0.0 (no sufficiency) to 1.0 (perfect sufficiency, i.e. if the condition is present, then the outcome occurs).
- **Coverage**: how many cases are "covered" by each positive condition? This has been expressed with a coverage coefficient (Cov) from 0.0 (no coverage) to 1.0 (perfect coverage, i.e. the condition is present in all tested cases -positive or negative).[13]

The result of this analysis is reported in Table 8, which contains the mathematics used to derive the coefficients, the derived coefficients and their descriptive definition per condition.

For a better understanding of "what numbers tell us", the descriptive definition of the coefficients uses adjectives to indicate their relative necessity, sufficiency and coverage (e.g. almost perfect sufficiency, low necessity, medium coverage etc.). The use of these adjectives is explained in the following Figure 4.

*Figure 3: Meaning of the necessity, sufficiency and coverage coefficients*




[13] We preferred to perform this simplified coverage analysis rather than conducting a more traditional analysis of two distinct elements: the necessity-coverage and the sufficiency-coverage. This more complex analysis (which is mainly conducted in academic research) would have made even more complex the "reading" of the results.

*Table 8 – QCA C-C – analysis necessity, sufficiency and coverage (individual factors)*

| Full name condition | Necessity-consistency analysis[14] and Ncon coefficient | Sufficiency-consistency analysis[15] and Scon coefficient | Coverage analysis[16] and Cov coefficient | Conclusions |
|---|---|---|---|---|
| **Media pressure** | Condition present in 32 successful cases over 37<br>• Ncon: 32/37 = 0.865 | Condition present in 35 cases, out of which 32 successful<br>• Scon 32/35 = 0.914 | Condition present in 35 cases out of 41 overall cases<br>• Cov 27/41 = 0.850 | • Very high necessity<br>• Almost perfect sufficiency<br>• Very high coverage |
| **Inclusion in national policies** | Condition present in 31 successful cases over 37<br>• Ncon: 31/37 = 0.838 | Condition present in 34 cases, out of which 31 successful<br>• Scon 31/34 = 0.912 | Condition present in 34 cases out of 41 overall cases<br>• Cov 34/41 = 0.829 | • Very high necessity<br>• Almost perfect sufficiency<br>• Very high coverage |
| **Pressure from other organisations** | Condition present in 25 successful cases over 37<br>• Ncon: 25/37 = 0.676 | Condition present in 28 cases, out of which 25 successful<br>• Scon 25/28 = 0.893 | Condition present in 28 cases out of 41 overall cases<br>• Cov 28/41 = 0.683 | • Medium necessity<br>• Very high sufficiency<br>• Medium coverage |
| **Civil society pressure** | Condition present in 25 successful cases over 37<br>• Ncon: 25/37 = 0.676 | Condition present in 28 cases, out of which 25 successful<br>• Scon 25/28 = 0.893 | Condition present in 28 cases out of 41 overall cases<br>• Cov 28/41 = 0.683 | • Medium necessity<br>• Very high sufficiency<br>• Medium coverage |
| **Private sector pressure** | Condition present in 25 successful cases over 37<br>• Ncon: 25/37 = 0.676 | Condition present in 28 cases, out of which 25 successful<br>• Scon 25/28 = 0.893 | Condition present in 28 cases out of 41 overall cases<br>• Cov 28/41 = 0.683 | • Medium necessity<br>• Very high sufficiency<br>• Medium coverage |
| **Assessment Council of Europe** | Condition present in 24 successful cases over 37<br>• Ncon: 24/37 = 0.595 | Condition present in 26 cases, out of which 24 successful<br>• Scon 24/26 = 0. 923 | Condition present in 26 cases out of 41 overall cases<br>• Cov 26/41 = 0.634 | • Medium necessity<br>• Very high sufficiency<br>• Medium coverage |

[14] Expressed as a necessity-consistency coefficient from 0 (no necessity) to 1 (perfect necessity, id est if the outcome occurs, the condition is present.)
[15] Expressed as a sufficiency-consistency coefficient from 0 (no necessity) to 1 (perfect sufficiency, id est if the condition is present, then the outcome occurs.)
[16] Expressed as a coverage coefficient from 0 (no coverage) to 1 [perfect coverage, id est the condition is present (value 1) in all tested cases (values 0 and 1.)]

| Full name condition | Necessity-consistency analysis[14] and Ncon coefficient | Sufficiency-consistency analysis[15] and Scon coefficient | Coverage analysis[16] and Cov coefficient | Conclusions |
|---|---|---|---|---|
| **Co-operation with Council of Europe** | Condition present in 22 successful cases over 37<br>• Ncon: 22/37 = 0.622 | Condition present in 23 cases, out of which 22 successful<br>• Scon 22/23 = 0.957 | Condition present in 23 cases out of 41 overall cases<br>• Cov 23/41 = 0.561 | • Medium necessity<br>• Very high sufficiency<br>• Medium coverage |
| **Presence in majority agenda** | Condition present in 21 successful cases over 37<br>• Ncon: 21/37 = 0.568 | Condition present in 23 cases, out of which 21 successful<br>• Scon 21/23 = 0.913 | Condition present in 23 cases out of 41 overall cases<br>• Cov 23/41 = 0.561 | • Medium necessity<br>• Almost perfect sufficiency<br>• Medium coverage |
| **Presence in opposition agenda** | Condition present in 16 successful cases over 37<br>• Ncon: 18/37 = 0.432 | Condition present in 18 cases, out of which 16 successful<br>• Scon 16/18 = 0.889 | Condition present in 18 cases out of 41 overall cases<br>• Cov 18/41 = 0.439 | • Low necessity<br>• Very high sufficiency<br>• Low coverage |
| **EU traction** | Condition present in 16 successful cases over 37<br>• Ncon: 16/37 = 0.432 | Condition present in 17 cases, out of which 16 successful<br>• Scon 32/35 = 0.941 | Condition present in 17 cases out of 41 overall cases<br>• Cov 17/41 = 0.415 | • Low necessity<br>• Very high sufficiency<br>• Low coverage |

This analysis shows that -in the case of C-C- the conditions can be aggregated in 3 extremely homogeneous groups:

- **Highly relevant conditions**: Media pressure and inclusion in national policies. They are characterised by very high necessity, almost perfect sufficiency and very high coverage
- **Relevant conditions** include pressure from other organisations, civil society pressure, private sector pressure, assessment of the Council of Europe, co-operation with the Council of Europe, and presence in the majority agenda. Therefore, they are characterised by a constant medium necessity and even medium coverage, even despite a very high or almost perfect sufficiency.
- **Scarcely relevant conditions** include presence in the opposition agenda and EU traction. They are characterised by low necessity and low coverage, even despite a very high sufficiency. While country-specific factors might determine the low coverage of the condition presence in opposition agenda, there are no reasons to disregard the importance of the condition EU traction, which due to the worldwide relevance of the Budapest Convention could have only a limited geographic relevance.

In the following notes, we focus on the conditions of the two first groups, starting from the **two highly relevant conditions** (first group).

- **Media pressure** is a very highly necessary condition (Ncon=0.865), almost perfectly sufficient (SCn=0.914) and with very high coverage (Cov=0.850). Reportedly, media coverage of both cyber-enabled and cyber-dependent crimes was present in many countries. Direct experience and the interviews conducted during this evaluation confirm that media attention has usually been triggered by events such as particularly relevant cyber-attacks or judicial police investigations. Media coverage was not necessarily put in relation with the initiatives of the Council of Europe, even if in some countries media reportedly covered the release of the Second Additional Protocol to the Budapest Convention.
- **Inclusion in national policies**. As mentioned, when analysing results from the QCA in THB, in the case of cybercrime this factor is to be regarded both as an objective of the Council of Europe initiatives and a condition for legislative change. It scores at the same level as Media pressure: it is a very highly necessary condition (Ncon=0.838), almost perfectly sufficient (Scon=0.912) and with very high coverage (Cov=0.829). At present, it reveals the commitment of the national institutions to embark on the path to reform -even if legislative change may also happen in the absence of this condition.

Regarding the second group (**relevant conditions**), we remark that:

- **Assessment of Council of Europe** and **co-operation with the Council of Europe** are part of the outcome tested with the QCA. They both score as a medium necessity and very highly sufficient conditions, with medium coverage and similar coefficients.[17] Furthermore, their co-presence leads to success in 14 cases over 37 (37.8%), and they are complementary (i.e., one of the two conditions is present) in 18 successful cases over 37 (48.6%), confirming that their presence is an important factor of success, but does not achieve the full necessity (cumulated Ncon = 0.864). Thus, to achieve success, they need contribution from other conditions, to confirm the validity of the question that is being addressed through QCA.
- **Pressure from other organisations**, c**ivil society pressure**, and **private sector pressure** share identical results (medium necessity, medium coverage and very high sufficiency) and coefficients: Ncon 0.676, Scon 0.893, Cov 0.6.
- Finally, **presence in the majority agenda** has very similar results (medium necessity, medium coverage and almost perfect sufficiency) and coefficients (Ncon 0.568, Scon 0.917, Cov 0.561.). Because of the many similarities among these four conditions, further analysis is

[17] Ass-CoE: NCon 0.595, SCon 0.923, Cov 0.634. Co-op-CoE: NCon 0.622, SCon 0.957, Cov 0.561.

needed to understand the interplays among them and their relative influence on legislative change. This was done and is reported in the following pages.

The use of a specialised software allowed us to identify a series of 24 different "pathways to change"[18] (or results or solutions). Those are combinations of different factors present in the cases where the legislative change was achieved.

These "pathways to change" are many more than in THB (in that case, they were 11), and this is undoubtedly due to two concurrent factors: the much higher number of considered countries (41 instead or 30, i.e. plus 37%) and the different interplay among the conditions.

The truth table that was produced to perform the analysis leading to the discovery of the 24 results identified three contradictory cases (countries): Cabo Verde, Paraguay and Costa Rica. They share the same positive and negative conditions, but the outcome was positive for Cabo Verde and Paraguay and negative for Costa Rica. Therefore, Cabo Verde and Paraguay are not considered in identifying the 24 results. The presence of only 3 contradictory cases out of such a wide sample is a confirmation of the validity of the QCA method.

We grouped the different pathways to change (solutions or **results**, in the QCA jargon) in Table 10, which uses a traffic-light system.

The first columns represent the conditions, and each row represents a different possible solution resulting from the QCA test.

The cells at the crossing of the first columns with the rows can have three different values; the following Table 9 defines their meaning.

*Table 9 – QCA, results table: the traffic light system*

| | |
|---|---|
| PRES. | The presence of the condition was necessary to achieve change in this solution |
| abs. | The presence of the condition was not necessary to achieve change in this solution (it was absent) |
| --- | The presence or absence of the condition was irrelevant to achieve change in this solution |

Every row represents a conjunction of different conditions to get to the result; this is expressed in Boolean algebra with the logical operator AND (or ^). In the QCA notation, this is generally represented as * (asterisk), which is also used in the following table between every two conditions.

The last but one column "Validity" reports the ISO code of the countries where this result was found; it contains a validity (or recurrence) coefficient, expressed in a percentage format. Finally, a footnote specifies the formula that was used to extract this coefficient.

The last column indicates how many conditions contributed to change, either because of their presence or absence. Therefore, it excludes these conditions that were irrelevant (yellow cells). Excluding the irrelevant conditions is a powerful feature of the QCA method, known as Boolean minimisation or Quine-McCluskey algorithm: "*it pairs combinations in the Truth Table based on their similarity and replaces two similar combinations with a simpler one sharing the conditions they have in common. The algorithm operates by merging two combinations of a Truth Table sharing the outcome and all conditions except one (the "one-difference rule") into a simpler combination presenting all the identical conditions (and the same outcome) but not the different conditions*."[19]

[18] In order to get to the different solutions, a "QCA truth table" was produced. The truth table is based on the raw data table and groups together similar cases as combinations of conditions that are sufficient for the outcome. In order to make easier the reading of this chapter, the truth table and the notes explaining how it should be read are not reported here but in Appendices K and L.

[19] Barbara Befani, quoted.

The employment in QCA of the Boolean minimisation brings to the apparently strange phenomenon that one country could be present in more than one possible result. In the cybercrime QCA test, it is the case for Nigeria and Senegal (included in three results); and for Albania, Armenia, Republic of Moldova, Serbia and Türkiye (included in two results). This is yet another prof of the powerful use of QCA in evaluation. This is justified by the fact that the many different tests for these countries revealed that some of their conditions were not relevant (yellow cells).

*Table 10 – QCA C-C, tested results*

| Ass-CoE | | Press-oth | | Co-op-CoE | | EU-tract | | Media | | Civ-soc | | Pri-sec | | Nat-pol | | Maj-ag | | Opp-ag | *Validity* | *Conditions* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | --- | *MDA, SRB, TUR, UKR* | 9 |
| --- | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | abs. | *MAR, ZAF, NGA, SEN* | 9 |
| PRES. | * | --- | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | *ALB, MDA, SRB, TUR* | 9 |
| abs. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | --- | *BRA, NGA, SEN* | 9 |
| abs. | * | --- | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | abs. | *NGA, SEN, TUN* | 9 |
| PRES. | * | abs. | * | PRES. | * | --- | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | *ALB, ARM* | 9 |
| PRES. | * | abs. | * | PRES. | * | abs. | * | --- | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | *ARM, JPN* | 9 |
| PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | --- | *FIN, SVN* | 9 |
| PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | --- | * | abs. | * | PRES. | * | PRES. | * | PRES. | *FRA, MLT* | 9 |
| abs. | * | abs. | * | abs. | * | --- | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | *GRC, NRL* | 9 |
| PRES. | * | abs. | * | PRES. | * | abs. | * | abs. | * | abs. | * | abs. | * | --- | * | abs. | * | abs. | *PHL, TON* | 9 |
| PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | abs. | *BGR, ESP* | 10 |
| PRES. | * | abs. | * | abs. | * | PRES. | * | abs. | * | abs. | * | abs. | * | PRES. | * | PRES. | * | abs. | *AUT* | 10 |
| PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | abs. | * | abs. | *BIH* | 10 |
| abs. | * | PRES. | * | PRES. | * | abs. | * | abs. | * | abs. | * | abs. | * | PRES. | * | PRES. | * | abs. | *BFA* | 10 |

| Ass-CoE | | Press-oth | | Co-op-CoE | | EU-tract | | Media | | Civ-soc | | Pri-sec | | Nat-pol | | Maj-ag | | Opp-ag | *Validity* | *Conditions* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRES. | * | PRES. | * | abs. | * | abs. | * | PRES. | * | abs. | * | abs. | * | PRES. | * | abs. | * | abs. | *DMA* | 10 |
| abs. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | PRES. | *GHA* | 10 |
| abs. | * | abs. | * | abs. | * | abs. | * | PRES. | * | abs. | * | abs. | * | abs. | * | abs. | * | abs. | *LIE* | 10 |
| PRES. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | abs. | * | abs. | * | abs. | * | abs. | *MUS* | 10 |
| abs. | * | PRES. | * | abs. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | abs. | *MCO* | 10 |
| abs. | * | PRES. | * | abs. | * | abs. | * | PRES. | * | abs. | * | PRES. | * | abs. | * | abs. | * | abs. | *NZL* | 10 |
| PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | abs. | * | abs. | * | abs. | * | abs. | * | abs. | *PRT* | 10 |
| PRES. | * | abs. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | abs. | * | PRES. | * | PRES. | * | abs. | *SVK* | 10 |
| PRES. | * | PRES. | * | abs. | * | abs. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | * | PRES. | *CHE* | 10 |

The analysis of the findings of this test could last several days and gives extremely powerful indications. Therefore, we reflect on just a few key emerging topics. We are sure that the sector operators will find additional and equally important elements of reflection.

- **The outcome we wanted to test is validated**: assessment and co-operation are essential elements leading to change, but they need allies as, together, they do not achieve the full necessity. What are these allies, and what is their importance? To answer to this question, we observe that at least one condition between the assessment and co-operation is always present in 20 out of the 24 possible results of the previous Table 10.
    - Their most important ally is the media pressure, as this condition is always present in the four cases where the assessment and co-operation are absent.
    - Their second most important ally is the private sector pressure (present in three of the four cases where the assessment and co-operation are absent), followed by pressure from other organisations, civil society pressure, inclusion in national policies and presence in majority agenda (present in two of the four cases of absence of the assessment and co-operation).
    - Change can also be achieved in the absence of the binomial assessment and co-operation. For instance, we observe that in the absence of the assessment, the most important allies of co-operation were media pressure (present in seven of the eight cases of absence of assessment), inclusion in national policies (six cases out of eight), civil society pressure and private sector pressure (five cases each over eight).
    - Likewise, a change could also be achieved in the absence of co-operation. However, it requires a more articulated strategy of alliances as no single condition is always present in the 12 cases where co-operation is absent (thus, reinforcing the importance of co-operation to achieve change). The most important allies of the assessment are, in these cases, media pressure (present in 11 cases of co-operation absence), inclusion in national policies (nine cases), Pressure from other organisations (eight cases) and presence in majority agenda (seven cases).
- As already observed when discussing THB, inclusion in national policies is part of the intermediate outcome of the Theory of Change for cybercrime (with legislative change and

*Figure 4: Truth table C-C: Inclusion in national policies as desired outcome*

**Truth-Table:**

| Country-ISO | Ass-CoE | Press-oth | Coop-CoE | EU-tract | Media | Civ-Soc | Pri-Sec | Maj-ag | Opp-ag | Nat-pol |
|---|---|---|---|---|---|---|---|---|---|---|
| ARG-P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LIE-P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| NER-O | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| GRC-P | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| TUN-O | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 |
| NZL-O | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| MCO-P | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |
| BFA-O | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| GHA-P | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| NGA-P, SEN-P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 |
| BRA-O | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 |
| CPV-P, PRY-P, CRI-P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| AUT-P | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| SVK-P | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| PHL-P(0), TON-P(1) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | C |
| JPN-P | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| ARM-P | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| BIH-P | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| ALB-P | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| PAN-P | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 |
| CHE-P | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| PRT-P | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| MLT-P | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| FIN-P | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| SVN-P | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| FRA-P | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| BGR-P, ESP-P | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| DEU-P | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| DMA-P | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| MUS-P | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| MAR-P, ZAF-O | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 |
| UKR-P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| MDA-P, SRB-P, TUR-P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

changes in practices) and a condition we wanted to test with QCA. In the case of C-C, inclusion in national policies is present in 31 of the 37 successful cases of change, while it was irrelevant in three cases. As we did for THB, we wanted to understand for C-C what are the most relevant conditions to get to inclusion in national policies. We did so by running a further QCA test where we considered inclusion in national policies as the expected outcome (instead of legislative change). The results (see the truth table in Figure 5) are scattered and do not allow a sharp interpretation but tend to suggest that the most relevant combination of factors leading to inclusion in national policies is the assessment and pressure from other organisations and media pressure or civil society pressure or private sector pressure. While there is no sufficient evidence to suggest that change happens more frequently once inclusion in national policies is achieved (as we said in the case of THB), it could be appropriate to consider the modification of the Theory of Change of C-C by including inclusion in national policies as a precursor of legislative change.

- As discussed above, **EU traction** could have relatively limited relevance in C-C because of the worldwide focus of the Budapest Convention; however, this condition could play a key role among EU member states and Candidate countries. What are the most relevant conditions to achieve change in these countries? We ran a quick QCA test by including only EU member states and Candidate countries; the results of this test are summarised in the following truth table. Apart from, obviously, EU traction (Ncon = 1.0), the most relevant conditions are the assessment and media pressure (Ncon = 0.937), inclusion in national policies (Ncon= 0.75), presence in majority agenda (Ncon= 0.625) and private sector pressure (Ncon= 0.562).

*Figure 5: Truth table C-C: EU-tract*

**Truth-Table:**

| Country-ISO | Ass-CoE | Press-oth | Coop-CoE | EU-tract | Media | Civ-Soc | Pri-Sec | Nat-pol | Maj-ag | Opp-ag | LEG-CHANGE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GRC | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AUT | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| SVK | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| BIH | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| ALB | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| PRT | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| MLT | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| FIN | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 |
| SVN | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| FRA | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| BGR, ESP | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| DEU | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| UKR | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| MDA, SRB, TUR | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |