



poiesis
TRUST IN SCIENCE

D1.5: Integrity, Integration, and Institutions for Trust: Reflections Based on Secondary Data Sources

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ABSTRACT:	This document reflects on the initial objective and activities within WP1 and distinguishes two main contributions within its findings: one conceptual focussing on challenges in the definition and operationalisation of trust in science in surveys; and one empirical presenting further thoughts on the implications of the POIESIS indicators for trust in science and the concept of context-dependent cultures of trust for the final recommendations of the project.
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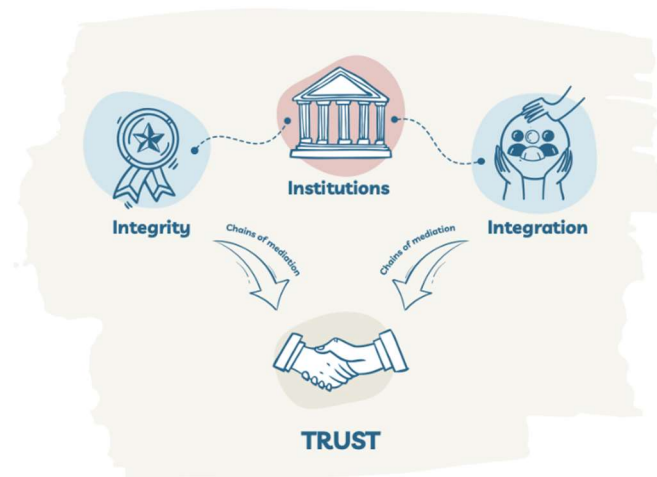
1. Objective and activities within WP1

Deliverable D1.5: ‘Integrity, Integration, and Institutions for Trust: Reflections Based on Secondary Data Sources’, presents reflections and main findings of WP1 of the POIESIS project. POIESIS - Probing the impact of integrity and integration on societal trust in science – aims to understand how, and to what extent, public trust in science is related to increased research integrity and the integration of citizens and societal stakeholders in the research process. In this regard, WP1 had the overall objective to curate, (re-)analyse, and synthesise secondary data on public trust in science considering also data on research integrity and societal integration in this regard.

The activities of WP1 have led to, first, a comprehensive exploration of the field of surveys on trust in science in Europe, resulting in a new conceptual approach to think of the operationalisations of trust in science surveys (see Bauer et al. 2023 and Behm-Bahtat et al. forthcoming); second, an in-depth analysis of Eurobarometer data resulting in the construction of new indicators of trust and the concept of cultures of trust in science (see Bauer et al. 2024 and Bunt et al. 2024); and finally, a reflection on the concept of trust in science from theoretical, empirical and survey perspectives in three expert workshops with key survey operators across Europe as well as science communicators with experience in crisis communication (in Berlin, June 2023; Lisbon, February 2024; and Paris, June 2025 (forthcoming)).

This deliverable offers a synthesis of detailed methods and findings reported in the previous deliverables of WP1 (see deliverables D1.2 (Bauer et al. 2023), D1.3 (Bauer et al. 2024) and D1.4 (Bunt et al. 2024)) as well as Behm-Bahtat et al. (forthcoming) as well as reflections on the implications of these findings as input for the final recommendations of POIESIS based on its 3i4t model (“Integrity, Integration and Institutions for Trust” – POIESIS consortium 2021).

Figure 1: The POIESIS 3i4t model



This deliverable proceeds in three steps: its first part relates to the conceptual dimension of trust in science from a survey perspective and introduces the trust paradigm-syntagma we developed. The second and third parts present our empirical work based mainly on data from the EB95.2 (2021), explaining our two indicators of trust and the emergent cultures of trust across Europe. Based on these important findings regarding trust in science from a survey perspective, in the conclusion, we formulate two crucial take-aways from WP1 for the development of POIESIS’ final recommendations.

2. Trust in science: concepts and surveys items

One of the first steps in the work of WP1 was to collect and review a large collection of national and international surveys on 'trust in science' (see D1.2 - Bauer et al. 2023). What becomes immediately obvious in this review, is that the complexity of the concept of trust in science comes with a variety of approaches to it in the surveys. These lead to a number of challenges in the operationalisation and interpretation of items 'measuring' trust in science in surveys. Diversity in this regard arises from indirect / direct approaches to trust in science, single or multiple items to measure it, diverging response scales, and numerous different wordings of the item elements themselves (see among others: Besley et al. 2021; Besley & Tiffany 2023; Hendriks et al. 2015; Reif & Guenther 2021).

Our suggestion to reduce this complexity is a paradigm-syntagma for trust items. We developed a structure with four columns (trustee / trustor / relation / context) representing four potential components of a trust item. Each item can be parsed into this structure and each item then constitutes a syntagma combining all or some components in each row (see Tables 1 and 2). We parse items into (1) the trustor, i.e., the general public, a group of people, an institution or actor who is trusting or granting the trust to the trustee. This is often implicit in the survey context as the target population of the survey that is answering the questions but can also be explicit depending on how the item is worded exactly; (2) the trustee, i.e., the actors, institution, people or the 'thing' that is the transitive object of trusting, is receiving trust, is given trust from the trustor. Another column (3) identifies the relation between trustor and trustee; what the trustor 'does' indicates the 'trusting' relationship. And (4) provides context for this trust relationship: topics, adverbials, specifications, survey context etc. One could of course be more specific and distinguish additional columns, but at the cost of jeopardising what is gained by complexity reduction.

The table produces a map of 2-value, 3-value or 4-value trust items. Table 1 shows the paradigm-syntagma including a comprehensive but non-exhaustive list of item elements collected on the basis of WP1's survey review. Table 2 provides examples of how to parse items into this structure using some of the core items we identified for our analysis in the EB 95.2 with an additional item from the IRIS researchers' survey.

Systematically used across surveys, this paradigm-syntagma could allow for the analysis of whether asking about trust in science differently might lead to different results in the level of trust observed. At a later stage, this structure will also allow the comparison of average levels of trust measured by each item.

This structure will further be helpful for our objective of fostering a long-lasting network of European survey operators. It might provide a common ground for discussion among survey operators who will be able to work along this map and reflect together on challenges related to the individual items. It is important to underline that there is not one 'right' way to construct items on trust in science and therefore the objective is not to find the optimal trust item(s) to use. It is however crucial to be very aware of one's approach to constructing trust items and the interpretation of the concept that comes with it. A European survey operator network will allow productive and ongoing exchanges and mutual learning and inspiration in dealing with the multi-dimensional concept of trust in science. POIESIS has initiated this process in two expert workshops bringing together most European survey operators (Berlin, June 2023, and Paris, June 2025 (forthcoming)).

Table 1: Towards a paradigm-syntagma of survey items on trust in science - structure

Trustor (trust subject)	The relation	Trustee (trust object)	Context
People like me	Trust in	Science	In general
	Distrust in		
Me personally / I	Is trustworthy	<ul style="list-style-type: none"> - In general - Scientific research. - Scientific theories. - Scientific method. - Scientific knowledge. - Specific disciplines 	
	Can no longer trust		
We	Truth telling		
The society	Confidence in	Scientists	Climate science
	Doing a good job	<ul style="list-style-type: none"> - In general - Working in public institutions - Working in industry - 	
General public (implicit)	Being familiar with	Public experts	COVID-19 pandemic
	Attitude towards (e.g., deeming trustee competent, experienced, qualified, honest, fair, integrous)	Integrity of science	
Scientists		Integration of public	
		Scientists' own research	

Table 2: Towards a paradigm-syntagma of survey items on trust in science – concrete examples

Trustor X (trust subject)	The relation	Trustee Y (trust object)	Context	Original wording of item	Source
We	Can no longer trust Y to tell the truth about science and technology.	Scientists	During controversies. and with increasing dependency on industry funding	We can no longer trust scientists to tell the truth about controversial scientific and technological issues because they depend increasingly on money from industry.	EB 95.2 (2021)
General public (implicit)	Attitude towards Y (reliable)	Scientists		Scientists are reliable.	EB 95.2 (2021)
General public (implicit)	Attitude towards Y (honest)	Scientists		Scientists are honest.	EB 95.2 (2021)
General public (implicit)	Attitude towards Y (knowing best what is good for people)	Scientists		Scientists know best what is good for people.	EB 95.2 (2021)
We	No option but to trust Y	Those governing science and technology		We have no option but to trust those governing science and technology.	EB 95.2 (2021)
Scientists	Become motivated by	General public	By adhering to research integrity procedures for increased trust	How motivating would more trust in my research by the general public be in encouraging you to adhere to formal research integrity procedures?	IRIS (Allum et al., 2022)

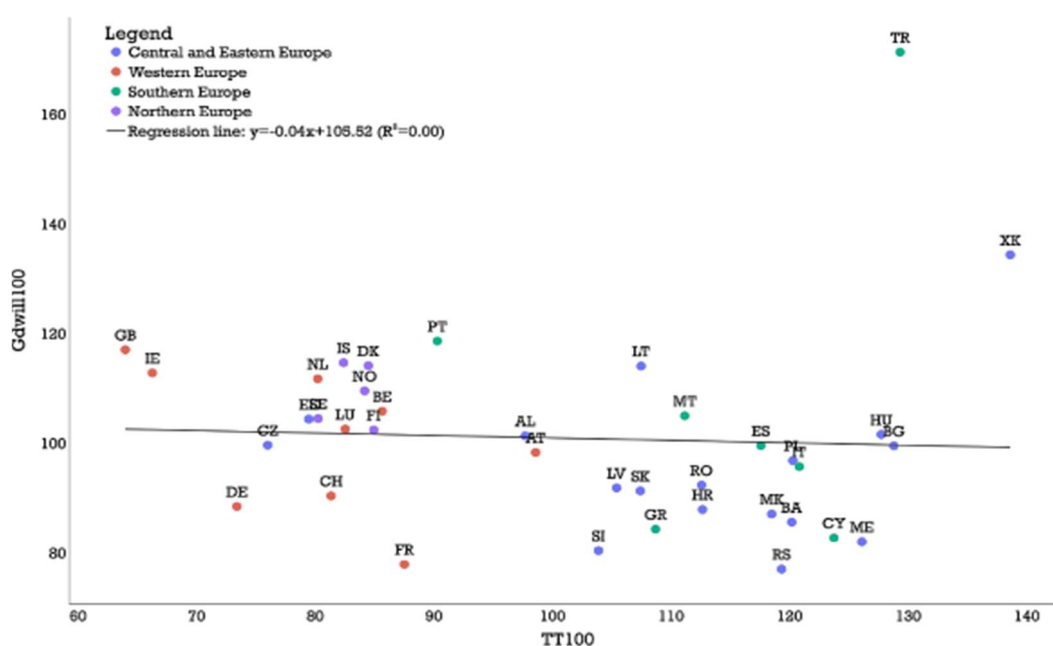
3.Trust in science: data and index construction from Eurobarometer 2021

In the course of WP1’s work, core items for analysis have been identified within the Eurobarometer survey EB95.2 (2021) based on the elements of the POIESIS 3i4t model – trust in science, research integrity and societal integration. An inductive analysis was conducted using all these items in order to see whether underlying dimensions of trust emerge. They did indeed, but not in alignment with the concepts of integrity and integration as one could have expected based on the POIESIS 3i4t model. This might be due to the fact that we had to work with items not specifically designed for measuring these concepts, but it might also hint at the direction that public trust in science functions along different dimensions than presumed (see D1.3 - Bauer et al. 2024).

The trust index we constructed based on Eurobarometer data (EB95.2, 2021) gives immediate comparability across 30+ countries and 300+ regions. It also allows backward comparisons to earlier surveys on some items. For more details on the indices TT100 and Gdwill100, their construction, validation, and their use towards an indication of cultures of trust across EU countries and regions, please see our previous deliverable D1.3 (Bauer et al. 2024).

As a main result, our inductive analysis of the core items identified in D1.2 (Bauer et al. 2023) led to the identification of **two distinct dimensions of trust towards science: Technocracy Tolerance (TT100)**, representing the willingness to grant authority to science and scientists and therefore kind of the systemic trust in the ‘pillar’ of science; and **Goodwill (Gdwill100)**, representing a high regard of scientists as well as a ready willingness to engage with science. Goodwill relates to trust in ‘players’ of science. Figure 2 maps the EU+ countries, included in the Eurobarometer survey, on both dimensions TT11 and Gdwill100.

Figure 2: Mapping EU+ countries on TT100 and Gdwill100





Further analysis with data from other sources shows that the two dimensions of trust we identified correlate with other relevant measures at the aggregate country level (Table 3). For instance, TT100 is positively correlated with existing measures of ‘technocratic attitudes’ among citizens (PEW 2017 $r = 0.55$; Bertou & Caramani (2020) $r = 0.78$), validating this index with external data. TT100 is also negatively correlated with the European innovation index SII 2023 ($r = -0.74$): countries that score high on innovativeness tend to score lower on TT100.

Table 3: Correlative validation of TT100 and GdWill100 [n=30]

	Indicator	Correlation TT100 (Pearson r)	Correlation Gdwill100 (Pearson r)
1	European innovation index (SII, 2023)	-0.74	0.12
2	Human Development Index (HDI, 2021)	-0.71	0.19
3	Gross domestic product per capita (GDP pc)	-0.65	0.17
4	Hofstede’s Hierarchy and Power Distance indicators	0.56	-0.33
5	Virus conspiracy item (EB95.2, 2021)	0.89	-0.18
6	Decreasing rejection of ‘Industry funded research’ (2010-2021)	0.76	0.12
7	Believe in vaccine safety (WGM, 2018)	0.72	0.27
8	Climate change fact denial (EB95.2, 2021)	0.72	-0.07
9	Scientists’ view RI import for public trust in science (IRIS,2022)	0.53	-0.04
10	Scientists’ adherence to RI principles to gain public trust (IRIS, 2022)	0.26	0.42
11	PEW (2017) Expertocracy is good government [YES minus NO, n=10]	0.55	0.06
12	Bertou & Caramani (2020, latent class estimates, n=9)	0.78	-0.11

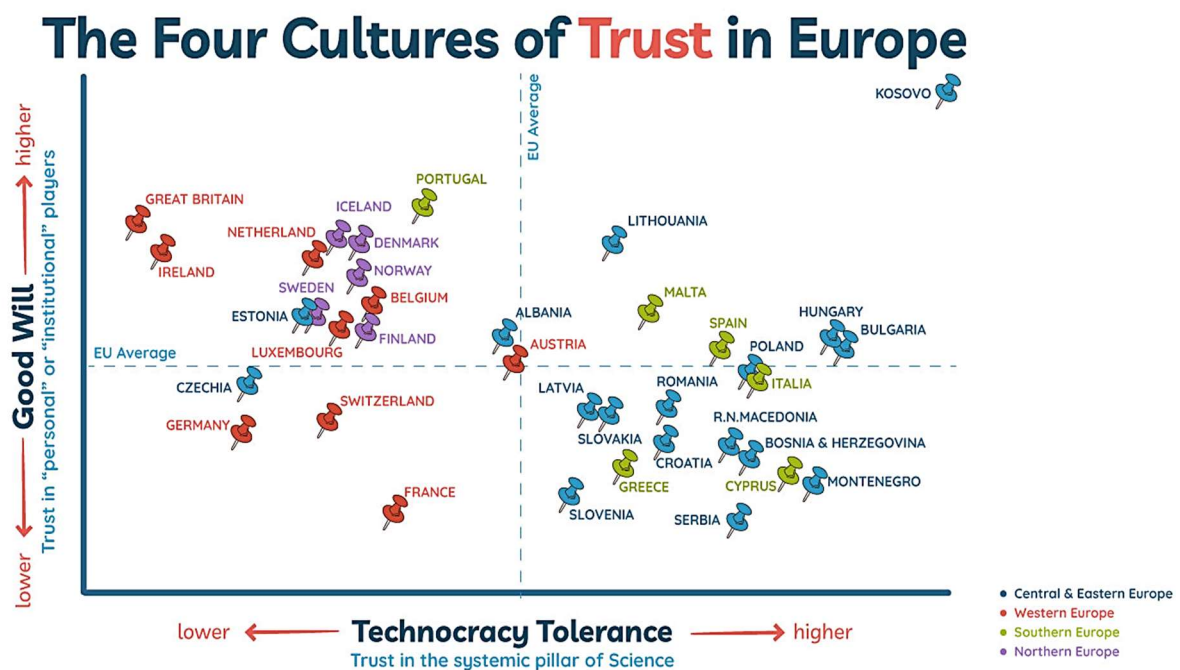
Note: TT100 and Gdwill100 are correlated with various global indicators and other indicators of ‘attitude to technocracy’ (PEW, 2017, and Bertou&Caramani, 2020). These indicators give additional meaning to a concept of Trust that distinguishes between Technocracy Tolerance TT towards the systemic pillar of science and Goodwill towards the players of science. The colours are a ‘heat graph’ ordering the correlations from relatively high (green) to relatively low (red).

TT100 further correlates with Hofstede’s Power Distance score, meaning that countries in which hierarchical relationships are strong also tend towards Technocracy Tolerance. On the other hand, countries in which the surveys report a developed motive, among scientists, to adhere to principles of integrity in order to gain public trust, score higher on our index Gdwill100 ($r = 0.42$). In countries in which this motive prevails, the public respects scientists and is happy to engage.

4. Towards ‘Cultures of Trust’ and a comparative matrix

Generally, indices can be used to evaluate performances, or to provide context information for performers. One idea of context for ‘performers’ of science and science communication is to consider trust as a cultural resource. We offer a suggestion of turning trust indices into a typology of resources. To avoid a simplistic – and often misleading – ranking of countries or regions on individual indicators and to take the analysis one important step further, we suggest a 2x2 grid of ‘Cultures of Trust’ based on high and low levels of the two dimensions Technocracy Tolerance and Goodwill (Figure 3).

Figure 3: Mapping Cultures of Trust for EU+ countries



Countries and regions can be individually situated within this grid and be further profiled using key indicators in combination with socio-economic variables, providing a nuanced understanding of trust dynamics in particular geographical contexts (see Table 4 for the POIESIS partner countries). This creates a comparative matrix on multiple and extendable criteria, allowing us to explore similarities and dissimilarities in the logic of multiple-case comparison or qualitative comparative analysis (QCA). In this open matrix, the typology of cultures defined by TT, Goodwill, Polarity and Consistency of trust, can be further elucidated by examining similarities and differences on other indicators as necessary and sufficient conditions (see Bauer et al., 2024 for more details).

Table 4: Comparative profiling ‘Cultures of Trust’ across seven POIESIS partner countries

Country	TT	Goodwill	Polarity	Inconsistency	Power distance	SII 2023	GDP pc/ppp 2021	HDI 2018	Edu attain 2018	Freedom 2023	GERD 2018
DE	Low	Low	High	Low	Low	High	High	High	Low	High	High
FR	Low	Low	High	High	High	High	High	Mid	High	High	High
UK	Low	High	Low	High	Low	High	High	High	High	High	High
PT	Low	High	Low	High	High	Mid	Low	Low	Low	High	Low
DK	Low	High	Mid	Low	Low	High	High	High	High	High	Low
GR	High	Low	Mid	High	High	Mid	Low	Low	Low	Low	Low
ES	High	Low	High	Low	High	Mid	Low	Mid	High	Low	Low

Note: Each country is given a rating on all indicators to show consistent patterns. TT, Goodwill, Polarity and Inconsistency are indicators of trust and potential dependent variables; power distance (Hofstede), European Innovation Index SII23, GDPpc, Human Development Index HDI, Education attainment, Freedom of Speech index and R&D spending (GERD) are potential predictor variable for multiple-case comparisons.

The analysis of countries can be extended by analogy to regions (see Table 5 below). Thus, reporting on regional ‘Cultures of Trust’ and on the distribution of our four culture types reveals regional variation within individual countries, highlighting and harnessing the diversity of trust cultures. Also, further socio-economic indicators can be put into a larger comparative matrix.

Altogether, classifying cultures of trust provides fertile ground for discussing the other qualitative as well as quantitative research results of the POIESIS project and how they relate to each other. Even more, they constitute an important contextual variable for specific geographical entities (countries / regions) in which science and science communication take place. Awareness of this context dependency is crucial for understanding the results of POIESIS and for the development of the final recommendations for trust in science, research integrity, social integration and not at least, the role of institutions.

Table 5: Distribution of Cultures of Trust across European Regions

1 = Ltt Lgw	2 = Htt Lgw	3 = Ltt Hgw	4 = Htt Hgw
AL021 - Elbasan	AT12 - Kaernten	AT12 - Niederösterreich	AL011 - Diber
AL031 - Berat	BG32 - Severen tsentralen	BE10 - Region de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest	AL012 - Durrës
AL032 - Fier	BG33 - Severoiztochen	BE21 - Prov. Antwerpen	AL013 - Kukës
AL033 - Gjirokaster	BG34 - Yugoiztochen	BE24 - Prov. Vlaams-Brabant	AL014 - Lezhe
AL035 - Vlore	BH01 - Federation of Bosnia and Herzegovina	BE31 - Prov. Brabant wallon	AL015 - Shkoder
AT22 - Steiermark	BH02 - Republika Srpska	BE32 - Prov. Hainaut	AL022 - Tiranë
AT31 - Oberösterreich	BH03 - Brecko District	BE33 - Prov. Liege	AL034 - Korçe
AT32 - Salzburg	CY01 - Lefkosia/Nicosia	BE35 - Prov. Namur	AT11 - Burgenland
AT33 - Tirol	CY03 - Ammochostos/Farmagusta	CZ01 - Praha	AT13 - Wien
AT34 - Vorarlberg	CY04 - Larnaka/Larnaca	CZ02 - Stredni Cechy	BE23 - Prov. Oost-Vlaanderen
BE22 - Prov. Limburg (BE)	CY05 - Lemesos/Limassol	CZ04 - Severozapad	BG31 - Severozapaden
BE25 - Prov. West-Vlaanderen	DE8 - Mecklenburg-Vorpommern	CZ05 - Severovychod	BG41 - Yugozapaden
BE34 - Prov. Luxembourg (BE)	EL30 - Attiki	CZ06 - Jihovychod	BG42 - Yuzhen tsentralen
CH01 - Region lemanique	EL51 - Anatoliki Makedonia, Thraki	DE1 - Baden-Wuerttemberg	CY06 - Pafos/Paphos
CH02 - Espace Mittelland	EL52 - Kentriki Makedonia	DE5 - Bremen	DEC - Saarland
CH03 - Nordwestschweiz	EL53 - Dytiki Makedonia	DE6 - Hamburg	EL43 - Kriti
CH04 - Zurich	EL63 - Dytiki Ellada	DK01 - Hovedstaden	EL61 - Thessalia
CH05 - Ostschweiz	EL65 - Peloponnisos	DK02 - Sjælland	ES23 - La Rioja
CH06 - Zentralschweiz	ES11 - Galicia	DK03 - Syddanmark	ES30 - Comunidad de Madrid
CH07 - Ticino	ES12 - Principado de Asturias	DK04 - Midtjylland	ES41 - Castilla y Leon
CZ03 - Jihozapad	ES42 - Castilla-la Mancha	DK05 - Nordjylland	ES43 - Extremadura
CZ07 - Stredni Morava	ES62 - Region de Murcia	EE001 - Pohja-Eesti	ES51 - Cataluna
CZ08 - Moravskoslezsko	FR22 - Picardie	EE006 - Kesk-Eesti	ES52 - Comunidad Valenciana
DE2 - Bayern	FR26 - Bourgogne	EE008 - Louna-Eesti	ES61 - Andalucia
DE3 - Berlin	FR43 - Franche-Comte	ES22 - Comunidad Foral de Navarra	FR24 - Centre
DE4 - Brandenburg	HR03 - Jadranska	ES24 - Aragon	HU21 - Kozep-Dunantul (Central Transdanubia)
DE7 - Hessen	HR04 - Kontinentalna	FI18 - Helsinki-Uusimaa	HU22 - Nyugat-Dunantul (Western Transdanubia)
DE9 - Niedersachsen	HU10 - Kozep-Magyarorszag (Central Hungary)	FI1C - Etela-Suomi	HU31 - Eszak-Magyarorszag (Northern Hungary)
DEA - Nordrhein-Westfalen	HU23 - Del-Dunantul (Southern Transdanubia)	FR23 - Haute-Normandie	HU33 - Del-Alfold (Southern Great Plains)
DEB - Rheinland-Pfalz	HU32 - Eszak-Alfold (Northern Great Plains)	IE042 - West	ITC3 - Liguria
DED - Sachsen	ITC1 - Piemonte + ITC2 - Valle d'Aosta/Vallee d'Aoste	IE051 - Mid-West	ITC4 - Lombardia
DEE - Sachsen-Anhalt	ITF4 - Puglia + ITF5 - Basilicata	IE052 - South-East (IE)	ITF1 - Abruzzo + ITF2 - Molise
DEF - Schleswig-Holstein	ITG2 - Sardegna	IE053 - South-West (IE)	ITF3 - Campania
DEG - Thuringen	ITH2 - Provincia Autonoma di Trento + ITH1 - Province Autonome du Sud-Tyrol	IE061 - Dublin	ITG1 - Sicilia
EE004 - Laeaeene-Eesti	ITH3 - Veneto	IE062 - Mid-East	IT12 - Umbria
EE007 - Kirde-Eesti	ITH5 - Emilia-Romagna	IE063 - Midland	IT14 - Lazio
EL54 - Ipeiros	IT11 - Toscana	IS001 - Hofudborgarsvaei	KV01 - FERIZAJ
EL64 - Sterea Ellada	IT13 - Marche	IS002 - Landsbyggd	KV02 - GJAKOVA
ES13 - Cantabria	LT009 - Utenos apskritis	ITF6 - Calabria	KV03 - GJILAN
ES21 - Pais Vasco	LV003 - Kurzeme	LT003 - Klaipedos apskritis	KV04 - MITROVICA
ES53 - Illes Balears	LV005 - Latgale	LT007 - Taurages apskritis	KV05 - PEJA
ES70 - Canarias	LV008 - Vidzeme	LT00A - Vilniaus apskritis	KV06 - PRISTINA
FI19 - Lansi-Suomi	LV009 - Zemgale	LU0 - Centre	KV07 - PRIZREN
FI1D - Pohjois- ja lta-Suomi	MEO2 - South	LU1 - Est	LT001 - Alytaus apskritis
FR10 - Ile de France	MK03 - Juzozapaden (Southwest)	NA (re-identification potential)	LT002 - Kauno apskritis
FR21 - Champagne-Ardenne	MK04 - Jugoistochen (Southeast)	NL11 - Groningen	LT004 - Marijampoles apskritis
FR25 - Basse-Normandie	MK05 - Pelagoniski (Pelagonia)	NL13 - Drenthe	LT005 - Panevezio apskritis
FR30 - Nord - Pas-de-Calais	MK06 - Poloshki (Polog)	NL21 - Overijssel	LT006 - Siauliu apskritis
FR41 - Lorraine	MK07 - Severoistochen (Northeast)	NL22 - Gelderland	LT008 - Telsiu apskritis
FR42 - Alsace	MK08 - Skopski (Skopje)	NL23 - Flevoland	LV007 - Pieriga
FR51 - Pays de la Loire	PL11 - Lodzkie	NL31 - Utrecht	ME01 - Center
FR52 - Bretagne	PL22 - Slaskie	NL32 - Noord-Holland	MK01 - Vardarski (Vardar)
FR53 - Poitou-Charentes	PL31 - Lubelskie	NL33 - Zuid-Holland	MT001 - Malta
FR61 - Aquitaine	PL34 - Podlaskie	NL34 - Zeeland	PL12 - Mazowieckie
FR62 - Midi-Pyrenees	PL41 - Wielkopolskie	NL41 - Noord-Brabant	PL21 - Malopolskie
FR63 - Limousin	PL43 - Lubuskie	NL42 - Limburg	PL52 - Opolskie
FR71 - Rhone-Alpes	PL51 - Dolnoslaskie	NO01 - Oslo og Akershus	PL63 - Pomorskie
FR72 - Auvergne	PL61 - Kujawsko-Pomorskie	NO03 - Sor-Östlandet	RO31 - Sud - Muntenia
FR81 - Languedoc-Roussillon	PL62 - Warminko-Mazurskie	NO04 - Agder og Rogaland	RO42 - Vest
FR82 - Provence-Alpes-Cote d'Azur	RO11 - Nord-Vest	NO05 - Vestlandet	SI033 - Koroska
IE041 - Border	RO12 - Centru	NO06 - Trondelag	SI038 - Primorsko-notranjska
ITH4 - Friuli-Venezia Giulia	RO32 - Bucuresti - Ifov	PT11 - Norte	SK03 - Stredne Slovensko
LU2 - Nord	RO41 - Sud-Vest Oltenia	PT15 - Algarve	SK04 - Vychodne Slovensko
LU3 - Sud	RS11 - Belgrade	PT16 - Centro (PT)	TR10 - Istanbul
LV006 - Riga	RS12 - Vojvodina	PT17 - Area Metropolitana de Lisboa	TR21 - Tekirdag, Edirne, Kirlareli
ME03 - North	RS21 - Central-West Serbia	PT18 - Alentejo	TR31 - Izmir
MK02 - Istochden (East)	RS22 - South-East Serbia	SE1 - Stockholm/Ostra Mellansverige	TR33 - Manisa, Afyonkarahisar, Kutahya, Usak
NL12 - Friesland	SI031 - Pomurska	SE2 - Smaland med oarna/Sydsverige/Vastsverige	TR41 - Bursa, Eskisehir, Bilecik
NO02 - Hedmark og Oppland	SI034 - Savinjska	SE3 - Norra Mellansverige/Mellersta Norrland/Ovra Norrland	TR42 - Kocaeli, Sakarya, Duzce, Bolu, Yalova
NO07 - Nord-Norge	SI035 - Zasavska	TR22 - Balikesir, Canakkale	TR51 - Ankara
PL32 - Podkarpackie	SI043 - Goriska	TR32 - Aydin, Denizli, Mugla	TR61 - Antalya, Isparta, Burdur
PL33 - Swietokrzyskie	SK01 - Bratislavsky kraj	TR52 - Konya, Karaman	TR62 - Adana, Mersin
PL42 - Zachodniopomorskie	SK02 - Zapadne Slovensko	TR71 - Kirikkale, Aksaray, Nigde, Nevsehir, Kirsehir	TR72 - Kayseri, Sivas, Yozgat
RO21 - Nord-Est		TRA1 - Erzurum, Erzincan, Bayburt	TR81 - Zonguldak, Karabuk, Bartin
RO22 - Sud-Est		TRB2 - Van, Mus, Bitlis, Hakkari	TR83 - Samsun, Tokat, Corum, Amasya
SI032 - Podravska			TR90 - Trabzon, Ordu, Giresun, Rize, Artvin, Gumushane
SI036 - Posavska			TRB1 - Malatya, Elazig, Bingol, Tunceli
SI037 - Jugovzhodna Slovenija			TRC1 - Gaziantep, Adiyaman, Kilis
SI041 - Osrednjeslovenska			
SI042 - Gorenjska			
SI044 - Obalno-kraska			
TR82 - Kastamonu, Cankiri, Sinop			

Note: This table lists the EU regions and shows how, based on Eurobarometer data (95.2), they fall into each type of 'culture of trust'. The colours indicate, based on the examples of the POIESIS partner countries except UK, how the regions of one country can be distributed across the four types: all regions in one type (Denmark & Portugal), across two or three (Greece) or across all four types (Germany, France & Spain). This indicates the homogeneity or heterogeneity of the 'culture of trust' within a country. The table is illustrative rather than final for use.

5. Concluding considerations

Beyond the comprehensive conceptual and empirical findings of the work in WP1, two main considerations are to be made to a) think about the heritage of the POIESIS project beyond its duration and b) inspire the development of final recommendations in regard to trust in science, research integrity, societal integration and the role of institutions based on the integration of the quantitative and qualitative data collected within the entire POIESIS project.

5.1 Strengthen the network of European trust surveys

- Although there is no evidence of an immediate crisis of trust in science, efforts to monitor this trust should continue at the national and international level.
- It is in the nature of a phenomenon like 'trust in science', that both its conceptualisation and its measurement must be kept under constant review. A network across the survey world will support this dual effort.
- Work in WP1 has shown that the survey landscape on attitudes towards and trust in science is very diverse. As the concept of trust in science is multi-dimensional, so is its survey operationalisation.
- It is important to guarantee continuity to the work we have started and to establish a long-lasting network of European national and international survey operators with an interest in trust in science.
- The objective should be to encourage exchange of ideas and work together on methodological challenges (e.g. new data collection methods, design changes, data migration strategies), new topics emerging in the context of trust in science (e.g. the role of AI) and many more.
- Such a network will also facilitate comparative analysis of data as well as bi-lateral and multi-lateral data-sharing. It is likely to improve the measurement of trust in science in the different countries but also ensure best practices and new insights on the concept of trust and its empirical trends.

5.2 Cultures of Trust and contingent recommendations

- Work in WP1 hints into the direction that public trust in science might not necessarily be directly linked to the concepts of research integrity and social integration as it is presumed in the POIESIS 3i4t model but rather function along other dimensions. However, the survey data alone does not allow us to draw any firm conclusions on that matter. Interpretations can only be made taking into account additional qualitative insights from the different contexts in question.
- An important limitation of our findings is that the existing items in the Eurobarometer data only approach or relate to the concepts of trust, integrity and integration, but have not been explicitly designed to measure them.
- Nevertheless, based on this data, we find that there is no clear correlation that would hint to a direct influence of perceptions of integrity and social integration on trust in science.
- This finding does not mean that research integrity and social integration are not important for public trust in science, only that citizens might not distinguish between these three concepts – integrity, integration and trust in science – so clearly as one might have expected.
- Rather, the results hint towards a distinction in the public perception between trust in the systemic 'pillar' of science on the one hand (TT100) and trust in the 'players' of science

(Gdwill100) on the other hand. Both dimensions seem to be embedded in broader societal trends as the correlations with external variables show. Further research is needed to investigate how exactly different societal developments are related to or may influence regional and national cultures of trust.

- A second and potentially even more important result that emerges from the work of WP1 is the identification of different cultures of trust as the strategic context in which scientific research and science communication take place.
- The existence of different cultures of trust, not only at the national but even at the regional level, needs to be taken into account along other crucial contextual factors when developing the final recommendations of the POIESIS project to foster and build trust in science. While overarching objectives for research integrity and social integration of science can be formulated at a European level, their local design needs to take into account the actual context in which they are to be implemented. We therefore suggest a contingent design of recommendations on how to build and maintain trust in science.
- The map of cultures of trust, together with the rich qualitative data of the project, can be a guide for this purpose.

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