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THE ACCURACY OF MEASURES OF INSTITUTIONAL TRUST IN HOUSEHOLD SURVEYS: EVIDENCE FROM THE OECD TRUST DATABASE

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THE ACCURACY OF MEASURES OF INSTITUTIONAL TRUST IN HOUSEHOLD SURVEYS: EVIDENCE FROM THE OECD TRUST DATABASE[1]

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ABSTRACT / RÉSUMÉ

A key policy concern in recent years has been the decline in levels of trust by citizen in public institutions. Trust is one of the foundations upon which the legitimacy and sustainability of political systems are built. It is crucial to the implementation of a wide range of policies and influences people's behavioural responses to such policies. However, despite its acknowledged importance, trust in public institutions is poorly understood and is not consistently measured across OECD countries. The *OECD Trust Database* brings together information from a wide range of different household surveys containing measures of trust and combines this with information on other social and economic outcomes. The size of the database and range of covariates make it possible to identify the underlying patterns captured by survey based measures of trust in institutions and systematically test the accuracy (i.e. reliability and validity) of these measures. Reliability is tested by examining the consistency of measures of institutional trust across different surveys and between different waves of the same survey. Validity is harder to test than reliability. It is however possible to examine the construct validity of institutional trust measures by looking at whether these measures show the expected correlation with other social and economic variables on a cross-country basis. Analysis of item-specific non-response rates provides important additional information on the face validity of institutional trust measures.

Keywords: trust, accuracy, reliability, household surveys, government
JEL Classification: A13, C46, H11, H83

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Une des préoccupations essentielles des pouvoirs publics ces dernières années a résidé dans le niveau de confiance des citoyens à l'égard des institutions publiques. La confiance est un des fondements sur lesquels reposent la légitimité et la viabilité des systèmes politiques. Elle est cruciale pour la mise en œuvre d'un large éventail de politiques publiques et influe sur les réactions comportementales des individus à ces politiques. Néanmoins, malgré son importance reconnue, la confiance dans les institutions publiques est mal comprise et n'est pas mesurée de manière cohérente dans les différents pays de l'OCDE. La *Base de données de l'OCDE sur la confiance* réunit des informations provenant d'un large éventail d'enquêtes menées auprès des ménages contenant des mesures de la confiance, et les associe avec des informations concernant d'autres éléments sociaux et économiques. La taille de cette base de données et la gamme de covariables permettent de cerner les tendances sous-jacentes qui ressortent des mesures de la confiance dans les institutions tirées d'enquêtes, et de tester de manière systématique l'exactitude (c'est-à-dire la fiabilité et la validité) de ces mesures. On teste leur fiabilité en examinant la cohérence des mesures de la confiance dans les institutions entre différentes enquêtes et entre différentes vagues de la même enquête. La validité est plus difficile à tester que la fiabilité. Il est cependant possible d'examiner la validité conceptuelle des mesures de confiance dans les institutions en vérifiant si ces mesures mettent en évidence la corrélation anticipée avec d'autres variables sociales et économiques à l'échelle internationale. L'analyse des taux de non-réponse par question fournit des informations complémentaires importantes sur la validité apparente des mesures de la confiance dans les institutions.

Mots-clés : confiance, précision, fiabilité, enquêtes auprès des ménages, gouvernement
Classification JEL : A13, C46, H11, H83

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1.   Trust is one of the foundations upon which the legitimacy and sustainability of public institutions are built. It is crucial to the implementation of a wide range of policies, and influences people's behavioural responses to such policies. However, despite its acknowledged importance, trust is poorly understood and is not measured consistently across OECD countries (OCDE 2013a).

2.   Systemic or institutional trust focuses on the interaction between public institutions and citizens and within government. In general terms, institutional trust happens when citizens appraise the government and their institutions in general and/or the individual political leaders as promise-keeping, efficient, fair and honest (Blind, 2006). But in this realm, a number of nuances and additional trust relationships can be considered, from different aspects of citizen trust in government to whether government agencies trusts citizens or each other.

3.   For example, Bouckaert (2012a) distinguishes between macro, meso and micro level trust, depending on whether trust is related to the functioning of the democratic system, policy making or service delivery. Others use "macro and micro" to describe trust in the political system, its institutions or in the personnel in charge of these institutions (Blind, 2006). Still others address how trust within government (among government institutions or between government and its employees) may influence efficiency in government outcomes through coordination or principal-agent failures. Trust can also be analysed from the point of view of how much do government institutions trust people, and whether this influences, for example, the regulatory activity of the state (Yang, 2005).

4.   Additionally, there is a second important conceptual distinction to make with respect to institutional trust. A common theme in the academic literature on institutional trust (e.g. Nooteboom, 2007) is the distinction between "trust in competence" (i.e. whether the functioning of institutions matches people's expectations about the competencies of those steering them) and "trust in intentions" (which captures whether institutions act in a way that is perceived by people as ethical and fair). These distinctions are extended by Bouckaert (2012b), who distinguishes between the "logic of consequences", where trust is derived causally from outcomes, and the "logic of appropriateness", where trust is based on the values of integrity and transparency. This distinction between the outcomes of an action and the intention that guided it forms the basis of the OECD trust framework, endorsed by the Organisation's Public Governance Committee. The framework identifies two key components of trust in institutions: Competence and Values. Within each component, relevant dimensions that are amenable to policy change are identified based on the common threads in the literature (Mcknight, Choudhury and Kacmar, 2002) and on the OECD update of this evidence (OECD, 2017).

5.   The complexity of trust relations could be illustrated by the table below. This framework classifies measures of trust primarily in terms of the parties involved in the trusting relationship, and it has the advantage of capturing a very comprehensive range of situations. However, the framework also has some limitations in that it primarily focuses on distinguishing individual trust from the different elements of institutional and political trust.

Table 1.   **A framework for multiple trust relationships**

By whom / on whom	Resident	Institutions	Leaders
Resident	・ Interpersonal trust	・ **Institutional trust**	・ Political trust
Institutions	・ Civic	・ Inter-institutional trust	・ Political-administrative trust
Leaders	・ Political trust	・ Political-administrative trust	・ Multilateral trust

Source: OECD (2017).

6.   Despite its limitations, the framework in Table 1 is useful for narrowing down the scope of this paper. Some of the types of trust identified by Table 1 are not suitable for measurement in surveys (e.g. civic trust) or do not obviously fall within the remit of official statistics (e.g. political trust), or both (e.g. multilateral trust). Trust by institutions or organisations (as opposed to trust in institutions) is not suitable for measurement through surveys of the general population, and hence none of the measures of trust by institutions are covered by this paper. Similarly, a household survey cannot specifically target political leaders as respondents, making this group out of scope even if there were no other reason to avoid collecting data of this sort. For this reason, the scope of the paper is kept relatively narrow, focusing on people's trust in institutions (i.e. *institutional trust)*.

7.   Data on people's trust in various public institutions have been collected by a range of organisations since the 1960s and 1970s, in some cases as part of the statistics compiled by national statistical offices (e.g. Australia, Canada, and New Zealand) and more commonly by research institutes (e.g. the different "barometers" conducted in various regions) or by private providers (e.g. the Pew Centre for People and the Press in the United States). However, there is little in the way of systematic assessment of the accuracy of institutional trust measures in the literature. This paper is an attempt to close that gap by systematically assessing existing measures of institutional trust.

8.   This paper is organised as follows. After this introduction, the next section describes the OECD Trust Database and provides an analysis of what this can tell us about the dimensionality of trust. Section three examines the accuracy of measures of institutional trust in terms of reliability and validity. Finally there is a short conclusion summarising the main results of the analysis.

2.   The OECD Trust Database

9.   For many years, the main source of internationally comparable data on trust has been the World Values Survey, which started collecting these data in 1981. More recently, a wider range of non-official sources have provided comparative data on trust, including the Gallup World Poll (GWP), the European Social Survey (ESS) and the European Quality of Life Survey (EQLS), while in 2013 the EU Statistics on Income and Living Conditions (EU SILC) provided first official estimates for European countries. Different surveys have different geographical coverage and frequency.

10.   Significant scope exists to improve the understanding of trust measures by systematically combining and comparing the main international datasets. The *OECD Trust Database* is an effort to map existing sources of (mainly non-official) data and compile them into a single repository of information. Table 2 displays the different surveys included in the *OECD Trust Database*, which has been constructed as cross-country panel dataset. Its coverage goes beyond OECD member states and includes up to 124 countries, spanning the period between 2002 and 2015 or the latest year available. The year 2002 was chosen as the database's starting point since the number of surveys regularly collecting trust data doubled with the appearance of the European Social Survey (ESS) in that year.

11.   Different surveys have different geographical coverage and collection frequency. In the case of the Gallup World Poll, data are collected annually for countries in all regions of the world, while for others surveys – including the WVS, ESS and EQLS – the coverage is limited to a smaller set of countries. Data collection takes place every two years for the ESS, every three years for the EQLS, and roughly every five years for the WVS. In turn, questions on institutional trust have started to be included in official surveys and in 2013 the European Union Statistics on Income and Living Conditions (EU-SILC) included an ad-hoc module including institutional trust questions. Table 2 describes some basic characteristics of the surveys included in the dataset.

Table 2.   Key features of the surveys included in the OECD Trust Database

Survey	Inception	Frequency	Number of countries in the OECD trust dataset	Coverage of the OECD trust dataset
Gallup World Poll (GWP)	2006	Yearly	115	2006-2015
World Values Survey (WVS)	1981	Every 5 years	Wave 4 (6) Wave 5 (46) Wave 6 (45)	Wave 4 (1999-2004) Wave 5 (2005-2009) Wave 6 (2010-2014)
European Social Survey (ESS)	2002	Every 2 years	Round 1 (22) Round 2 (25) Round 3 (23) Round 4 (28) Round 5 (27) Round 6 (29)	Round 1 (2002) Round 2 (2004) Round 3 (2006) Round 4 (2008) Round 5 (2010) Round 6 (2012)
European Quality of Life survey (EQLS)	2003	Every 3 years	Round 2 (31) Round 3 (34)	Round 2 (2007/08) Round 3 (2011/12)
Eurobarometer	1973	Yearly	34	2003-2015
Latinobarometer	1995	Yearly	19	2002-2015
EU-SILC	2003	2013 ad-hoc module	33	2013

Source: OECD Trust Database.

12.   The surveys included in the OECD Trust Database vary in terms of data quality. While all of the surveys have different areas of strength and weakness, some of the surveys place a greater emphasis on methodological rigour and consistency than others. Beyond official statistics, both the ESS and EQLS are directly funded by the European Commission, and aspire to very high standards of data quality. A great deal of attention is paid to consistency across countries and changes between waves are carefully managed. Covering a much greater range of countries, the Gallup World Poll varies more in survey content from wave to wave, but nonetheless retains a strong focus on methodological consistency and minimises the impact of questionnaire changes by having a fixed core questionnaire. The World Values Survey has evolved over time, and data quality is higher in more recent waves than in earlier waves. In contrast, both the Eurobarometer and Latinobarometer place a greater emphasis on responsiveness to policy issues and thus the questionnaires change more frequently and response rates are generally lower.

13.   In the case of institutional trust, questions are traditionally formulated through a common heading (e.g. "do you have confidence in your…") followed by a list of (primarily public) institutions (e.g. government, congress, etc.) and less commonly private (e.g. major companies). Survey wording varies considerably both in terms of the general construction of the question and in the use of the term trust or one of its various synonyms (e.g. confidence). Table 3 describes the institutions considered by each of the datasets included in the OECD Trust Database.

Table 3.   Measures of institutional trust in the OECD Trust Database scales

Measure	Survey						
	Gallup World Poll	World Values Survey	European Social Survey	European Quality of Life Survey	Euro-barometer	Latino-barometer	EU-SIILC
Confidence/trust in government	Yes/No/DK	A great deal/quite a lot/not very much/not at all		1-10 No trust at all-complete trust	Tend to trust/Tend not to trust	A great deal/quite a lot/not very much/note at all	
Confidence/trust political system							0-10 No trust at all-complete trust
Confidence/trust in financial institutions	Yes/No/DK						
Confidence/trust in judicial system/courts	Yes/No/DK	A great deal/quite a lot/not very much/not at all	0-10 No trust at all-Complete trust	1-10 No trust at all-complete trust	Tend to trust/Tend not to trust	A great deal/quite a lot/not very much/note at all	0-10 No trust at all-complete trust
Confidence/trust in police	Yes/No/DK	A great deal/quite a lot/not very much/not at all	0-10 No trust at all-Complete trust	1-10 No trust at all-complete trust	Tend to trust/Tend not to trust	A great deal/quite a lot/not very much/note at all	0-10 No trust at all-complete trust
Confidence/trust in military	Yes/No/DK	A great deal/quite a lot/not very much/not at all			Tend to trust/Tend not to trust		
Confidence/trust in the press		A great deal/quite a lot/not very much/not at all		1-10 No trust at all-complete trust	Tend to trust/Tend not to trust		
Confidence/trust in political parties		A great deal/quite a lot/not very much/not at all			Tend to trust/Tend not to trust	A great deal/quite a lot/not very much/note at all	
Confidence/trust in regional authorities					Tend to trust/Tend not to trust	A great deal/quite a lot/not very much/note at all	
Confidence/trust in television		A great deal/quite a lot/not very much/not at all		1-10 No trust at all-complete trust	Tend to trust/Tend not to trust		
Confidence/trust in internet					Tend to trust/Tend not to trust		
Confidence/trust in parliament			0-10 No trust at all-Complete trust	1-10 No trust at all-complete trust		A great deal/quite a lot/not very much/note at all	
Confidence/trust in politicians			0-10 No trust at all-Complete trust				
Confidence/trust in European parliament			0-10 No trust at all-Complete trust				
Confidence/trust in European Union		A great deal/quite a lot/not very much/not at all	0-10 No trust at all-Complete trust				
Confidence/trust		A great					

in labour unions		deal/quite a lot/not very much/not at all				
Confidence/trust in the civil service		A great deal/quite a lot/not very much/not at all				
Confidence/trust in Major companies		A great deal/quite a lot/not very much/not at all				
Confidence/trust in environmental organizations		A great deal/quite a lot/not very much/not at all				
Confidence/trust in women's organisations		A great deal/quite a lot/not very much/not at all				
Confidence/trust in the state pension system to deliver			A great deal/some/not very much/not at all			
Confidence/trust in social benefit system to deliver			A great deal/some/not very much/not at all			
Confidence/trust in the State					A great deal/quite a lot/not very much/note at all	
Confidence/trust in the president					A great deal/quite a lot/not very much/note at all	
Confidence/trust in public administration					A great deal/quite a lot/not very much/note at all	

Source: OECD Trust Database.

14.   Further observation of the available data on institutional trust reveals that questions sometimes refer to similar concepts while using quite different descriptions. For instance, some surveys refer simply to "the courts" while others ask about the "judicial system". While in most cases the interpretation of these concepts is straightforward, in others the lack of absolute clarity may have more significant implications. For example, although most surveys ask about trust in government, the ESS asks about trust in politicians and EU-SILC asks about trust in the political system. In turn, the Latinobarometer has included questions about trust in government, the state, and public administration, concepts traditionally related to each other but not strictly synonymous. The EQLS includes a few questions worded in a more comprehensive way: Instead of asking for a particular institution, EQLS has extended the question to a policy field (e.g. state pension system or social benefit system) that includes a set of institutions.

15.   Different surveys, or even different questions within the same survey, make use of different response scales. For example, while the GWP Poll relies primarily on a "yes/no/don't know" response format, others surveys such as EU-SILC the ESS and EQLS use longer numeric scales (0-10 and 1-10 in the case of ESS and EQLS, respectively). In the case of the WVS, questions are usually answered using a 4 point Likert scale (i.e. "a great deal", "quite a lot", "not very much" and "none at all"). In the OECD Trust Database, different question have been re-scaled to a binary "yes/no" format that allows comparability across surveys.

The dimensionality of trust

16.   While the *OECD Trust Database* captures a wide range of different questions it is important to know whether the answers to these questions actually capture significantly different information. For example, are respondents able to meaningfully distinguish between "trust in the political system" and "trust in parliament". The World Values Survey (WVS) provides a useful tool for examining the degree to which different measures of trust capture different constructs. Wave 6 of the WVS contains questions on 18 different types of trust, with responses from 68 486 individuals, which allows an empirical analysis of how different responses group together. Table 4 below shows the results of a principal component analysis of the WVS trust questions, aimed at identifying the degree to which the different questions collect fundamentally different information. The table takes the 18 trust questions from wave 6 of the WVS and identifies the degree to which these reflect a smaller number of 'latent' factors that best explain the variance in the dataset. For each trust measure, the higher the number in a particular column, the more strongly that measure is correlated with the latent factor associated with that column. Factor 2, for example, has high values for the government, political parties, parliament, and the civil service, suggesting that the latent factor is related to political institutions. With a 0.4185 for factor 2, trust in the courts is clearly associated with trust in government institutions more broadly to a much greater degree than are the armed forces (0.1342), but still not to the same degree as the core government institutions.

Table 4. **The dimensionality of trust measures in the World Values Survey**

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
The government (in your nation's capital)	0.1752	*0.748*	0.0335	0.3271	0.0597
Political Parties	0.2352	*0.8235*	0.0803	0.1339	0.0695
Parliament	0.2604	*0.8302*	0.0703	0.1655	0.055
The Civil service	0.371	*0.6175*	0.0795	0.2346	0.0994
The armed forces	0.2348	0.1342	0.0597	*0.7278*	0.0983
The police	0.1687	0.3064	0.0662	*0.7708*	0.1152
The courts	0.2387	0.4185	0.06	*0.651*	0.0643
Major Companies	*0.716*	0.2356	0.0381	0.1722	0.0639
Banks	*0.6384*	0.2744	-0.0369	0.2069	0.0878
Universities	*0.6355*	0.2135	0.0764	0.2474	0.047
Environmental organizations	*0.8024*	0.1589	0.0919	0.0753	0.0569
Women's organizations	*0.7783*	0.1101	0.1463	0.0629	0.0437
Your family	0.1084	0.0336	-0.0637	-0.012	*0.7179*
Your neighbourhood	0.0415	0.1176	0.1914	0.126	*0.7572*
People you know personally	0.0461	0.0336	0.315	0.1434	*0.6838*
People you meet for the first time	0.025	0.1079	*0.6301*	0.0688	0.3439
People of another religion	0.1019	0.0426	*0.8892*	0.0437	0.0549
People of another nationality	0.123	0.0502	*0.8862*	0.0437	0.061

Note: The estimates are based on a Principal Component Analysis, while the rotation method is Varimax with Kaiser Normalization. The total variance explained 65.3%, while the Cronbach's Alpha is 0.8844.

Source: OECD Trust Database.

17.   An analysis of Table 4 shows that five different factors account for 65% of total variance (across individuals) of the 18 trust questions included in the World Values Survey. These factors are trust in non-governmental institutions (factor 1: major companies, banks, universities, environmental organizations, women's organizations), trust in political institutions (factor 2: government of the day, political parties, parliament, civil service), trust in law and order institutions (factor 4: armed forces, police, courts); trust in people known to the respondent (factor 3: family, neighbours, people you know), and trust in strangers (factor 5: people you meet for the first time, people of another nationality, people of another religion). These broad results are robust to different specifications such as looking only at institutional trust or only at interpersonal trust, and hold across different waves of the WVS.

18.   Similar factor analyses have been performed by Naef and Schupp (2009) and Uslaner (2002). Naef and Schupp focus on a three factor model using the German Socio-economic Panel and find that inter-personal trust has two distinct factors relating to people you know and strangers respectively. Institutional trust forms a distinct third factor. Uslaner finds similar results, but is able to add the important detail that the Rosenberg question on generalized trust loads on the factor relating to strangers rather than people you know. Schneider (2016) undertakes a more focused analysis using a sample of 35 former Soviet and eastern European countries to examine the dimensionality of institutional trust. She finds a similar split to that identified in Table 2 between trust in political institutions and trust in law and order institutions, although she does not test for non-governmental organizations.

19.   Both the analysis in Table 4 and the wider literature paint a similar picture of the dimensionality of trust. However, it also highlights the fact that many of the finer distinctions made between different types of trust are not very empirically informative. This does not necessarily imply that there is no value in asking more specific questions about trust: different trust questions may closely co-vary for reasons other than that they are measuring the same thing (e.g. they may have very similar drivers). If users' need is

sufficiently strong, even relatively minor differences between closely related concepts may be important. However, it does suggest that, when deciding which trust measures are worth collecting, a relatively narrow range of measures will cover the most important aspects of trust. The following sections will further explore the accuracy of the two institutional trust sub-dimensions (e.g. trust in political institutions and trust in law and order institutions). Specifically, based on the theoretical relevance and data availability across different surveys the following sections will present an analysis of "trust in government" and related terms as well as the "courts/judicial system" and the "police"[3].

3.   Accuracy of trust measures

20.   The accuracy of a metric is the degree to which it captures the concept that it is intended measure. Typically accuracy is thought of as having two dimensions: reliability and validity. The reliability of a metric is the degree to which repeated measurements of the same thing produce the same results. In this sense, a reliable measure is one that involves minimal "noise" or random errors in the measurement process. Validity, on the other hand, is concerned with whether the measure in question is biased. A valid measure is one that shares the same central tendency as the concept to be measured.

21.   A measure can be reliable without having a high degree of validity if it is not noisy but bears little direct relationship to the concept to be measured. At the limit, a highly reliable but invalid measure will be "precisely wrong". At the other extreme, a measure can be valid without being very reliable. Such a measure will be accurate on average, but individual measurements will have a high level of noise. An accurate measure needs adequate levels of both reliability and validity, although the desirability of different trade-offs between the two will depend on the precise use to which the data is to be put.

Reliability of trust measures

22.   As discussed above, the reliability of a measure captures the degree to which it produces consistent results when measured at different times. Ideally, a good measurement instrument should produce the same estimate of the concept to be measured whenever it is applied in similar circumstances, and should produce a different result only when there has been a substantive change in the object of measurement. In survey research, the standard measure of reliability is test-retest reliability, where the same measurement item is administered to the same person after a delay of some period. This may be later on in the same survey, or it may involve the respondent being re-surveyed after a fixed period of time. Unfortunately, there are relatively few studies that investigate the test-retest reliability of institutional trust measures. However, an alternative strategy exists for assessing the reliability of trust measures. The OECD Trust Database provides repeated measures of trust for a wide number of countries at different points in time, from different surveys, and using different measurement instruments. This provides a strong basis for assessing the reliability of trust measures at the country average level. In particular, if different surveys produce consistent results for different countries, despite differences in timing and methodology, then it can be said that trust measures display a high degree of reliability at the cross-country level.
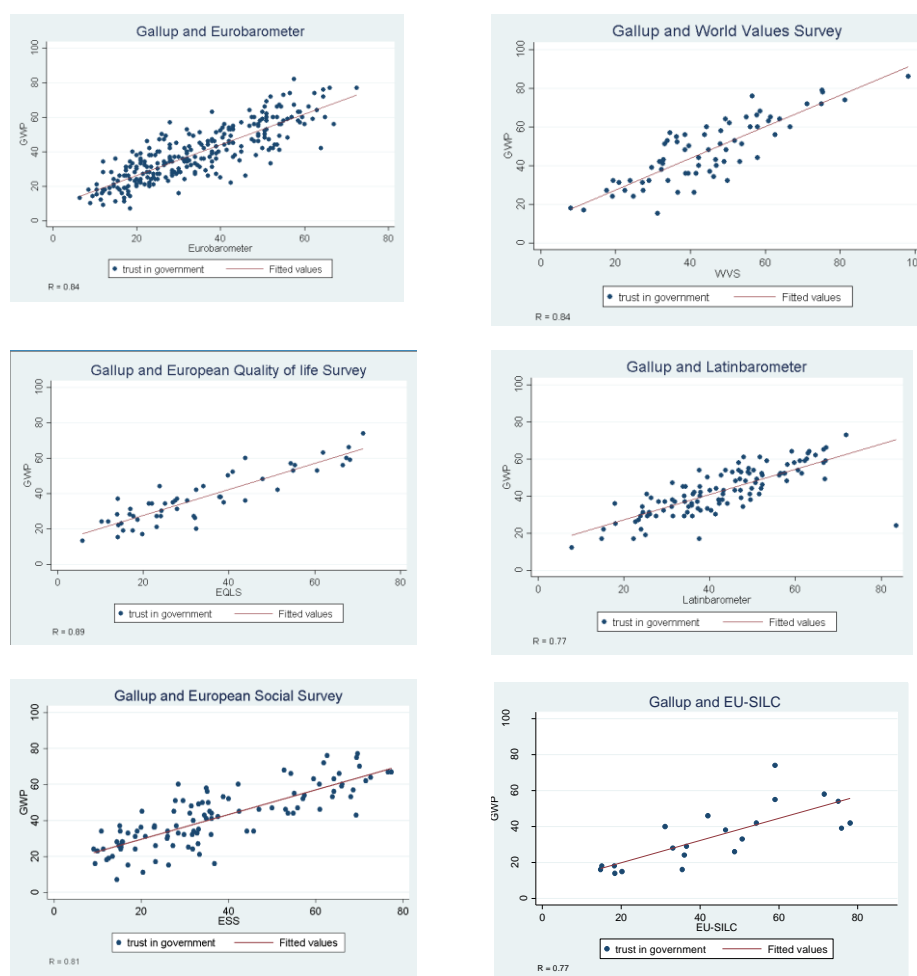
23.   The wide range of questions on institutional trust available in the OECD Trust Database, and the fact that all surveys include at least some of them, makes it possible to conduct a fairly thorough analysis of the reliability of measures of institutional trust. This includes looking at whether the reliability of questions on institutional trust is different for different types of institution. Figure 1 reports the correlation coefficients between measures of trust in the national government for 6 different surveys. In each case, the

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[3]   While the police and the courts/judicial system belong to the same sub-dimension of trust questions the level of people's (i.e. law and order institutions) exposure to each of them is different. Throughout their life people interact with the police regularly and for different reasons. In turn, interaction with the courts/justice system is less common.

comparison is between country-average levels of trust in the national government or an associated concept (e.g. the political system in the case of EU-SILC) for the same country and year, but as measured through different surveys. Because the surveys may be carried out at different periods within the same year, and because each survey has a unique sample of respondents, some difference in reported levels of trust may be expected. Still, a high correlation coefficient provides strong evidence that the measures produce reliable information.

Figure 1. Correlation of trust in government measures between the Gallup World Poll and other household surveys, 2002-2015

Note: The Pearson correlation coefficient is a test for the strength of a relationship between two variables or datasets. Under this method, it is assumed that the data are normally distributed and that the expected relationship between them is linear. If the correlation between the two items is high, this suggests that the two measures capture the same underlying concept. GWP = Gallup World Poll; EB = Eurobarometer; ESS = European Social Survey; WVS = World Values Survey; EQLS = European Quality of Life Survey; LB = Latinobarometer, EU-SILC= European Union Statistics on Income and Living Conditions.

Source: OECD Trust Database.

24.   Figure 1 shows correlation coefficients between the Gallup World Poll and other surveys ranging between 0.77 (Gallup and Latinobarometer and Gallup and EU-SILC) and 0.89 (Gallup and the European Quality of Life survey). All the correlation coefficients are above 0.75, and the majority are above 0.8. In the case of correlations below 0.8 they involve the Latinobarometer which is the survey included in the analysis with the lowest level of methodological rigour. In the case of EU-SILC it is worth noticing that the

question wording is different as it asks about trust in "the political system" and not the government. While both concepts are closely related the interpretation for some respondents could vary as the former excludes institutions that are not of political nature but still belong to government.

25.   Figure 2 drops the Gallup World Poll from the analysis and displays the correlation coefficients between the other surveys in the *OECD Trust Database*. These range from 0.91 between Eurobarometer and both the European Quality of Life Survey and the World Values Survey to 0.59 between the World Values Survey and Latinobarometer. In a similar way to the previous set of correlations the lower correlation coefficient is found between the World Values Survey and Latinobarometer. Yet, most correlations are relatively high signalling a high level of reliability between different trust questions.

26.   The only official source of cross country comparative measures of institutional trust is the ad hoc data collection carried out by EU-SILC. Figure 3 shows the correlation coefficient of EU-SILC and other surveys collecting data for European countries. In all cases the correlation coefficient is higher than 0.75 and reaches 0.97 in the case of EU-SILC and the European Social Survey and 0.87 between EU-SILC and the Eurobarometer. The lowest value of the correlation coefficient is found between EU-SILC and the World Values Survey.

Figure 2. Correlation of trust in government measures from different household surveys
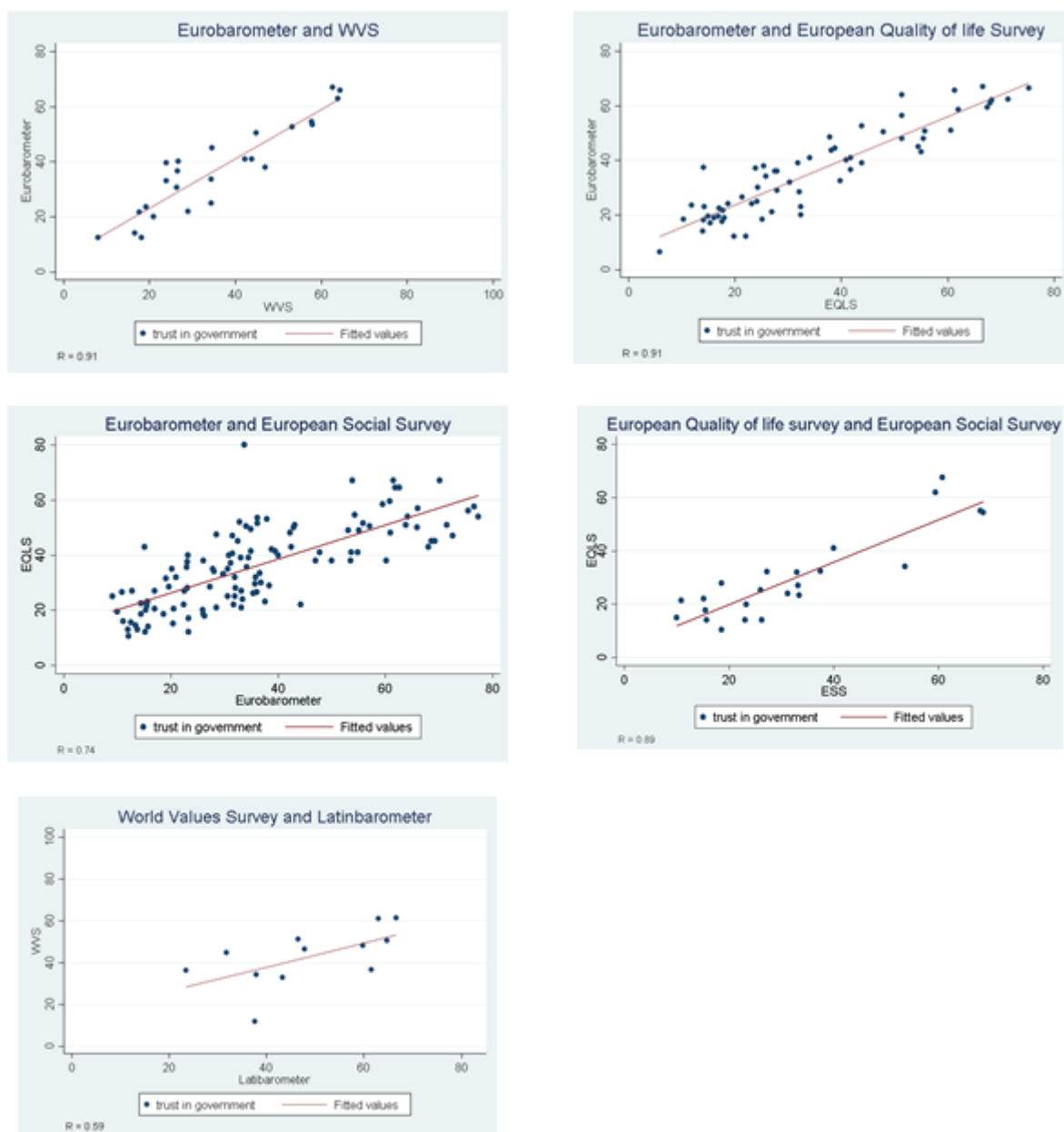
Note:
The Pearson correlation coefficient is a test for the strength of a relationship between two variables or datasets. Under this method, it is assumed that the data are normally distributed and that the expected relationship between them is linear. If the correlation between the two items is high, this suggests that the two measures capture the same underlying concept. GWP = Gallup World Poll; EB = Eurobarometer; ESS = European Social Survey; WVS = World Values Survey; EQLS = European Quality of Life Survey; LB = Latinobarometer, EU-SILC= European Union Statistics on Income and Living Conditions.

Source: OECD Trust Database.

Figure 3. Correlation of trust in government measures between EU-SILC and other non-official household surveys, 2013
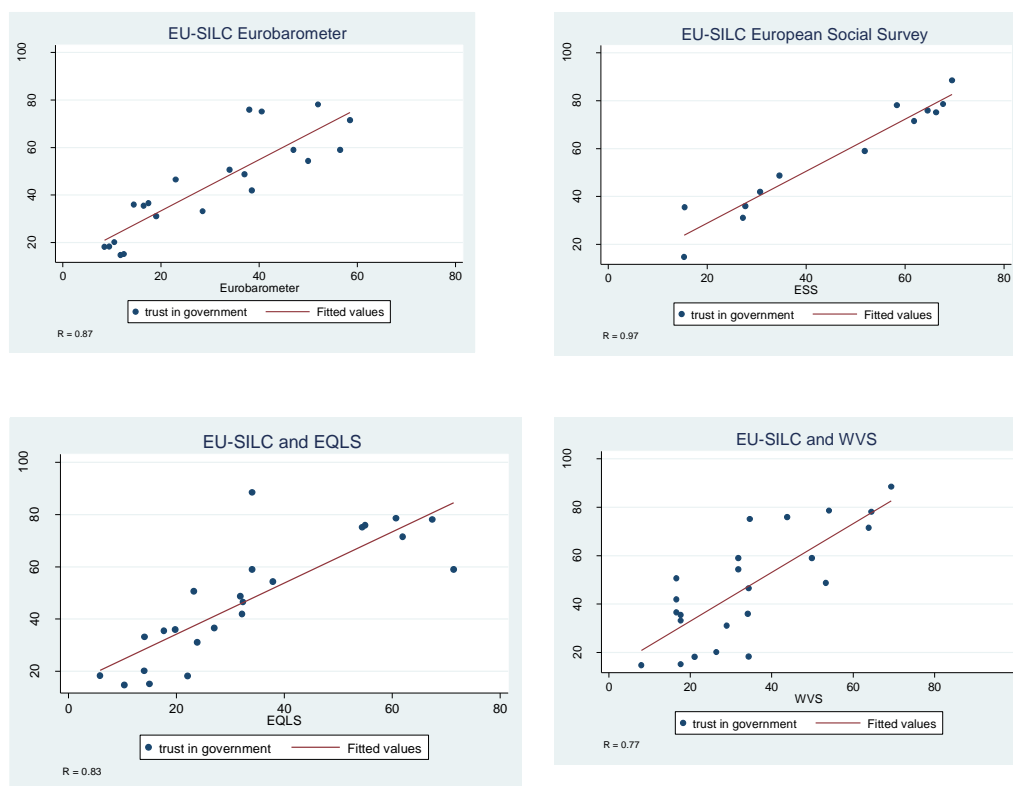

Note: The Pearson correlation coefficient is a test for the strength of a relationship between two variables or datasets. Under this method, it is assumed that the data are normally distributed and that the expected relationship between them is linear. If the correlation between the two items is high, this suggests that the two measures capture the same underlying concept. GWP = Gallup World Poll; EB = Eurobarometer; ESS = European Social Survey; WVS = World Values Survey; EQLS = European Quality of Life Survey; LB = Latinobarometer, EU-SILC= European Union Statistics on Income and Living Conditions. In the case of the European Social Survey the average between the 2014 and 2012 collection was computed. In the case of the EQLS data are for 2012.

Source: OECD Trust Database.

27.   Moving on from trust in government, Figure 4 reports a similar analysis that focuses on trust in the judicial system. Again, the results obtained from different surveys correlate with each other very strongly, ranging from 0.68 (Latinobarometer/GWP) to 0.93 (European Social Survey with the GWP and with Eurobarometer). Ignoring the Latinobarometer, the range of correlations is even narrower (0.82 to 0.96) than in the case of trust in the national government, reflecting the fact that all of the surveys reviewed here include relatively similar questions on trust in the legal system.

Figure 4. Correlation of trust in the judiciary measures between the Gallup World Poll and other household surveys, 2002-2015
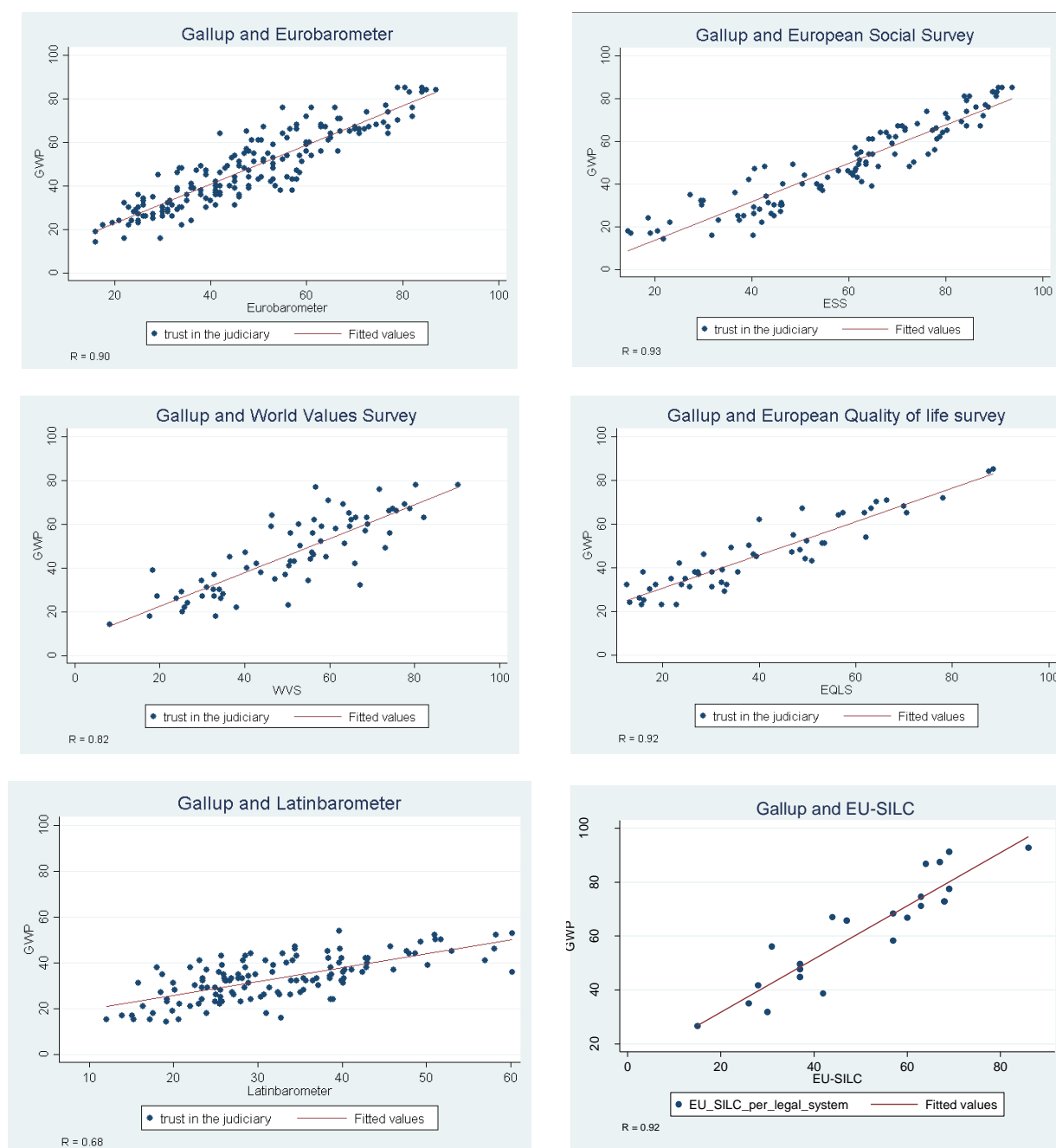
Source: OECD Trust Database.

28.   Relatively high correlations are also found between a second set of questions on trust in the legal system or the courts (Figure 5). These range from 0.93 between Eurobarometer and the European Social Survey to 0.84 between Eurobarometer, the European Quality of Life Survey and the World Values Survey. In the case of the latter the question asks about trust in the courts rather than about trust in the legal system. Finally, Figure 6 shows the correlation coefficient between EU-SILC and other European

household surveys ranging from 0.84 between EU-SILC and EQLS to 0.90 between EU-SILC and the ESS.

Figure 5. Correlation of trust in the judiciary measures between Eurobarometer and other household surveys in Europe, 2002-2015

Note: The Pearson correlation coefficient is a test for the strength of a relationship between two variables or datasets. Under this method, it is assumed that the data are normally distributed and that the expected relationship between them is linear. If the correlation between the two items is high, this suggests that the two measures capture the same underlying concept. GWP = Gallup World Poll; EB = Eurobarometer; ESS = European Social Survey; WVS = World Values Survey; EQLS = European Quality of Life Survey; LB = Latinobarometer, EU-SILC= European Union Statistics on Income and Living Conditions.

Source: OECD Trust Database.

Figure 6. Correlation of trust in the judiciary measures between EU-SILC and other non-official household surveys, 2013 or latest available
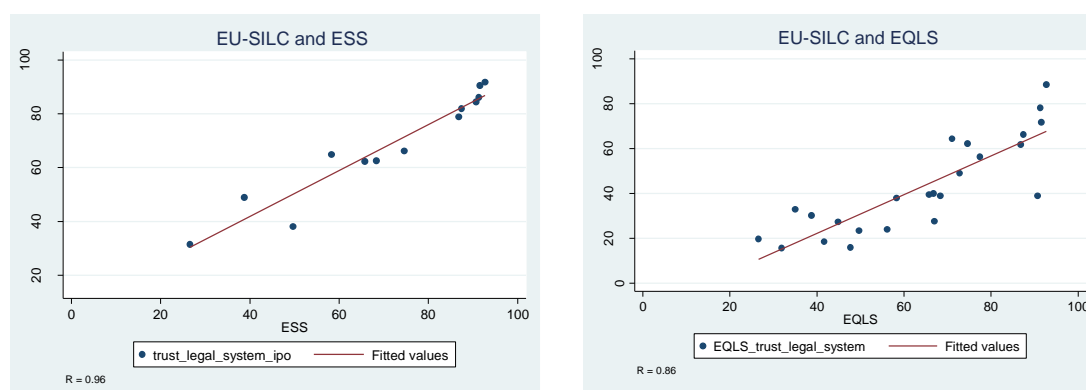
Note: Data from the EQLS are from wave 3 and correspond to 2012. Data from the ESS are an average of 2014 and 2012.

Source: OECD Trust Database.

29.   The third sub-factor analysed here is trust in the police. As seen in Figure 7 when the same analysis is performed between trust in the police in the Gallup World Poll and other surveys the correlation coefficients range from 0.75 (Gallup and EQLS) to 0.85 (Gallup and the European Social Survey) . Similarly, when the analysis is carried out between Eurobarometer and other household surveys (Figure 8) the coefficients are generally higher ranging from 0.85 (Eurobarometer and World Values Survey) to 0.94 (Eurobarometer and the EQLS). When the analysis is restricted to European surveys using EU-SILC as comparator (figure 9) the correlation ranges between 0.89 (EU-SILC and EQLS) and 0.94 (EU-SILC and ESS). In all cases the correlation coefficients of measures of trust in the police are higher than 0.75.

Figure 7. Correlation of trust in the police measures between Eurobarometer and other household surveys in Europe, 2002-2015

Note: The Pearson correlation coefficient is a test for the strength of a relationship between two variables or datasets. Under this method, it is assumed that the data are normally distributed and that the expected relationship between them is linear. If the correlation between the two items is high, this suggests that the two measures capture the same underlying concept. GWP = Gallup World Poll; EB = Eurobarometer; ESS = European Social Survey; WVS = World Values Survey; EQLS = European Quality of Life Survey; LB = Latinobarometer, EU-SILC= European Union Statistics on Income and Living Conditions.

Source: OECD Trust Database.

Figure 8. Correlation of trust in the police measures from different household surveys, 2002-2015

Note: The Pearson correlation coefficient is a test for the strength of a relationship between two variables or datasets. Under this method, it is assumed that the data are normally distributed and that the expected relationship between them is linear. If the correlation between the two items is high, this suggests that the two measures capture the same underlying concept. GWP = Gallup World Poll; EB = Eurobarometer; ESS = European Social Survey; WVS = World Values Survey; EQLS = European Quality of Life Survey; LB = Latinobarometer, EU-SILC= European Union Statistics on Income and Living Conditions.
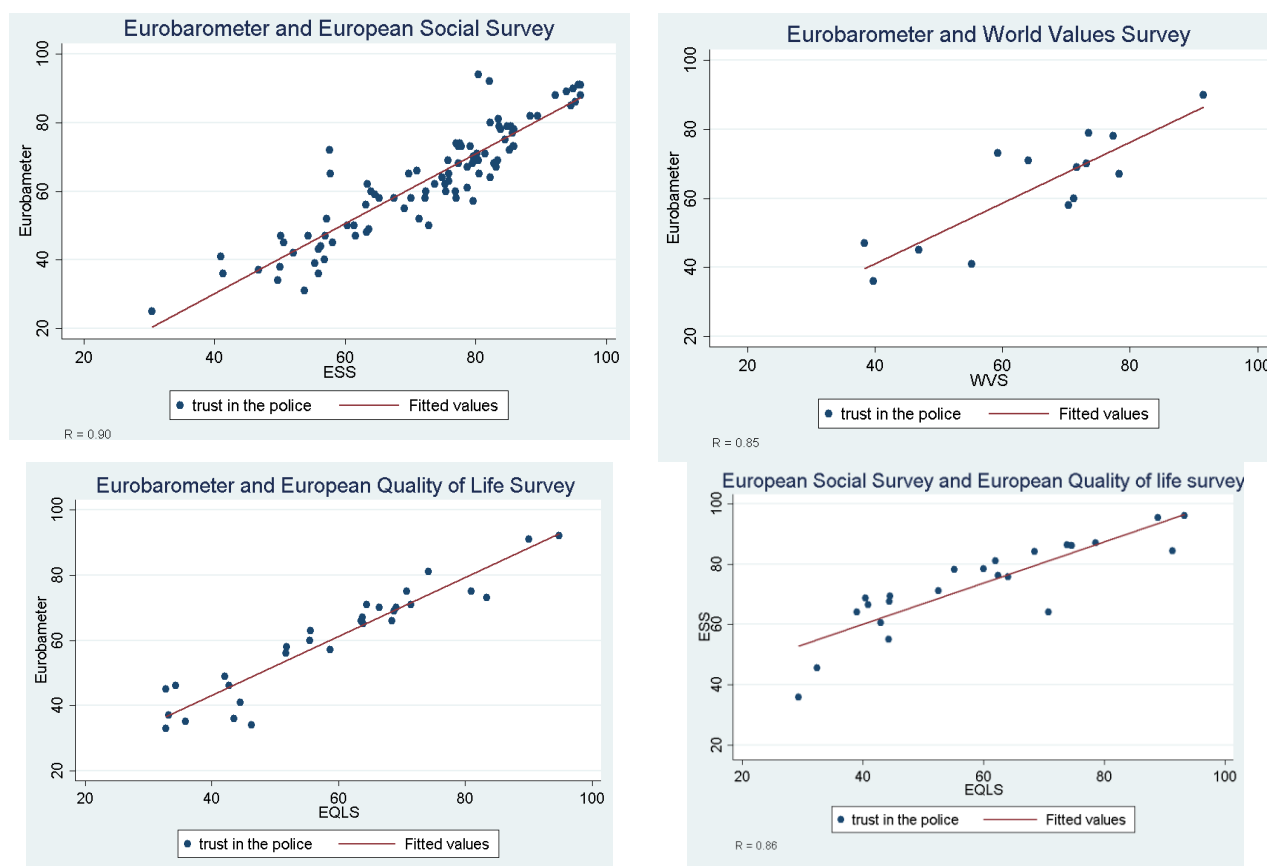
Source: OECD Trust Database.

Figure 9. Correlation of trust in the police measures between EU-SILC and other non-official household surveys, 2002-2015

Note: The Pearson correlation coefficient is a test for the strength of a relationship between two variables or datasets. Under this method, it is assumed that the data are normally distributed and that the expected relationship between them is linear. If the correlation between the two items is high, this suggests that the two measures capture the same underlying concept. GWP = Gallup

World Poll; EB = Eurobarometer; ESS = European Social Survey; WVS = World Values Survey; EQLS = European Quality of Life Survey; LB = Latinobarometer, EU-SILC= European Union Statistics on Income and Living Conditions.
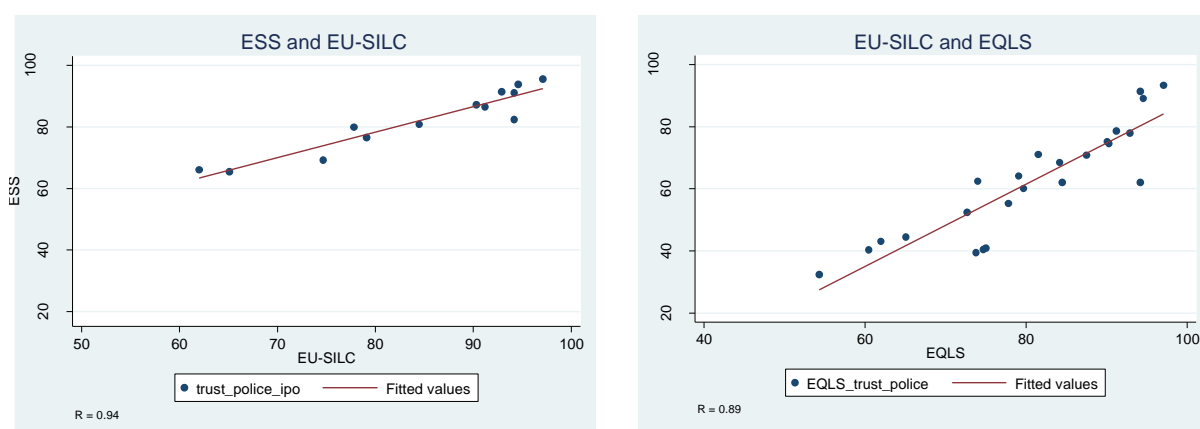
Source: OECD Trust Database.

30.   All of the analysis so far has focused on the reliability of trust estimates across different surveys. However, in the case of the ESS and EQLS there are sufficient survey waves to examine the reliability of institutional trust measures over time. This involves looking at correlations between waves of the same survey. If the measure used is reliable, then correlations between successive waves should be relatively high, and the correlation should decline between waves that are more separated in time. The WVS is not suitable for this approach due both to the long period between waves and to the changes in country coverage between waves. However, both the EQLS and ESS have smaller gaps between waves (two and three years respectively), and cover a consistent panel of countries.

31.   Tables 5, 6 and 7 below show the correlations between waves of the ESS for government, the judiciary and the police. It can be seen that the correlations are high (lowest value is 0.70) for successive waves. The correlations tend to fall, as would be expected, with waves that are more separated in time. Nonetheless, these correlations also remain high, and the combination of high inter-wave correlations falling with time is consistent with a high level of reliability.

Table 5.   Intra-wave correlation for government trust, based on the European Social Survey

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Wave 1						
Wave 2	0.92					
Wave 3	0.94	0.96				
Wave 4	0.90	0.87	0.96			
Wave 5	0.91	0.77	0.88	0.90		
Wave 6	0.92	0.82	0.87	0.87	0.96	

Note: The correlation is based on the question: How much personally do you trust each of these institutions? Politicians.

Source: European Social Survey (2016).

Table 6.   Intra-wave correlation for trust in the judiciary, based on the European Social Survey

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Wave 1						
Wave 2	0.95					
Wave 3	0.93	0.97				
Wave 4	0.85	0.92	0.96			
Wave 5	0.79	0.88	0.94	0.92		
Wave 6	0.88	0.93	0.92	0.94	0.97	

Note: The correlation is based on the question: How much personally do you trust each of these institutions? The legal system.

*Source:* European Social Survey (2016).

Table 7.   Intra-wave correlation for trust in the police, based on the European Social Survey

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Wave 1						
Wave 2	0.94					
Wave 3	0.96	0.98				
Wave 4	0.84	0.89	0.95			
Wave 5	0.69	0.70	0.79	0.74		
Wave 6	0.88	0.95	0.94	0.93	0.72	

Note: The correlation is based on the question: How much personally do you trust each of these institutions? The police.

Source: European Social Survey (2016).

32.   Institutional trust measures are available for fewer waves of the EQLS than the ESS. Nonetheless, it is possible to look at the correlation between waves 2 and 3 of the EQLS. Figure 10 illustrates this and shows high correlations ranging from 0.82 in the case of the government to 0.94 for the police. This is a little below that found for the ESS, even allowing for the slightly longer gap between waves in the EQLS when compared to the ESS. However, this level of correlation is still high in absolute terms and is consistent with a high degree of reliability in the measure.

Figure 10. **Intra-wave correlation for generalised trust based on the European Quality of Life Survey**
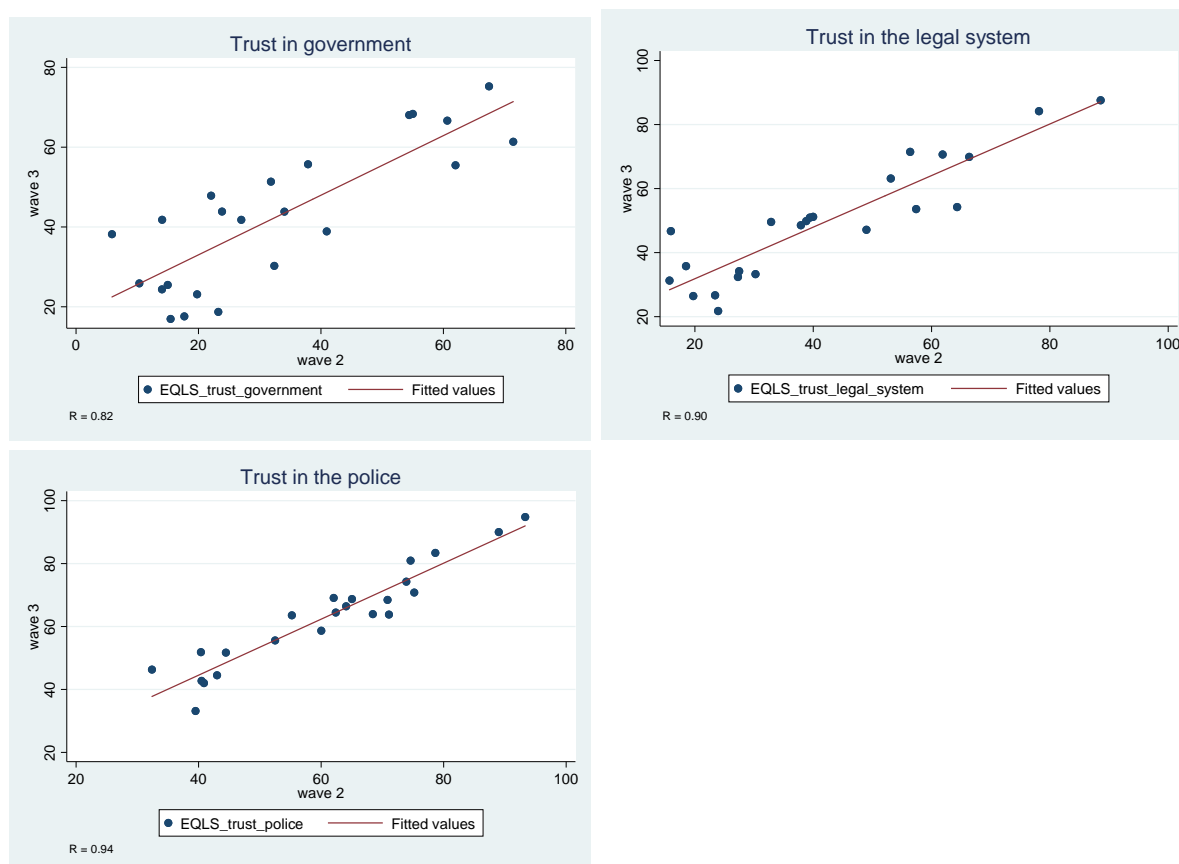
Note: The correlations are based on the following questions: Please tell me how much you personally trust each of the following institutions: government, legal system, police.

*Source:* European Quality of Live Survey waves 2 and 3

Validity of trust measures

33.   Validity can be assessed in a number of different ways. These include contingent validity, convergent validity, construct validity, and face validity. Contingent validity occurs where the measure is necessarily equivalent to the construct be measured by construction, and is obviously not possible for a concept such as trust. It is also difficult to assess institutional trust in terms of convergent validity. This is because convergent validity involves looking at whether different proxies for the concept produce similar information. Although it is possible to identify potential proxies for some aspects of institutional trust (e.g. the extent of tax avoidance as a proxy for overall trust in government) it would take considerable effort to assemble the relevant data. This is beyond the scope of this paper, and there is little in the way of academic literature focusing on the convergent validity of institutional trust. It is, however, possible to provide a fairly good analysis of the validity of institutional from the perspective of construct validity and face validity.

34.   Construct validity addresses the degree to which a measure behaves in a way that is consistent with expectations. Higher levels of institutional trust should be associated with greater willingness on the part of people to co-operate with government agencies in the pursuit of common goals, or with higher measures of government trustworthiness.

35.   There is good evidence of a positive relationship between institutional trust and citizen support for government policy. In a cross-country analysis, Zhao and Kim (2011) highlight a positive correlation between institutional trust and levels of the Foreign Direct Investment that a country receives. Murphy (2004) and Murphy et al. (2009) find a significant positive relationship between trust in regulators and voluntary compliance in the area regulated; similarly, Daude et al. (2012) have documented a strong link between institutional trust and willingness to pay taxes. Knack and Keefer (1997) analysed responses to the WVS across about 30 countries, finding a positive correlation between measures of citizens' confidence in government and objective indicators of bureaucratic efficiency. There is also a robust cross-country correlation between trust in institutions and perceptions of corruption (OECD, 2013b). Figure 11 illustrates this relationship, showing that perceived levels of corruption are correlated with both trust in government ($r = 0.66$) and trust in the judicial system ($r = 0.75$) and trust in the police ($r = 0.73$).

Figure 11.   Institutional trust and perceptions or corruption, 2012-2015
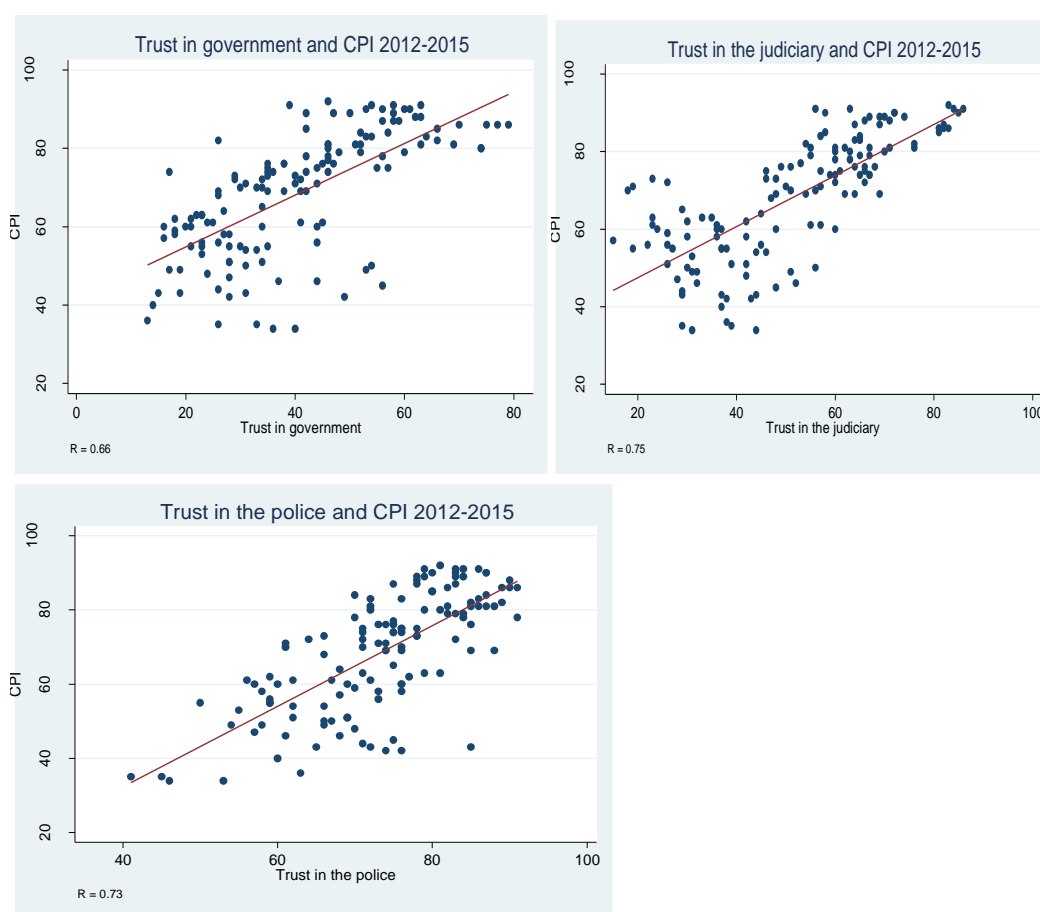
Source: Gallup (2016), Transparency International Corruption Perception Index (2016).

36.   There is evidence showing that institutional trust is linked to economic outcomes. Figure 12 shows the relationship between trust in three institutions – government, the judiciary and the police – and GDP per capita. In all cases the correlation is strongly positive, slightly more so in the cases of trust in the judiciary and the police. This makes intuitive sense, as many of the key levers through which institutions affect economic outcomes, such as contract enforcement or regulation of the market place, have a more direct link to the judicial system than to the government more generally.

Figure 12.   Institutional trust and GDP per capita in OECD countries, 2006-2015

Source: Gallup (2016), OECD Stat (2016).

37.   Roth (2015) finds a strong negative correlation between institutional trust and unemployment for 12 countries in the euro area from 1999 to 2014. Figure 13 confirms this relationship, using a different set of data sources, and also provides information on the relative strength of the relationship for different forms of institutional trust. While there is a relationship between trust in the police (r = 0.22), trust in the judicial system and the unemployment rate (r = 0.31), the relationship is stronger for trust in the government (r = 0.37). This is consistent with a view that responses to questions on trust in institutions reflect the respondent's trust both in institutions generally as well as in the specific institution that is the focus of the question. In this case, the correlation is higher for government than for the police and the judicial system, reflecting both the police's judicial system's weaker relevance to employment policy.

Figure 13.   Institutional trust and unemployment rates in OECD countries, 2006-2015

*Source:* Gallup (2016), OECD Stat (2016).

38.   One area where one would expect to see a much stronger relationship with trust in the police and the judicial system than with trust in the government more generally is crime. If measures of institutional trust are valid, then variation in the crime rate should be more strongly linked to trust in the police and the judicial system than to trust in government as a whole. This is exactly what is shown in Figure 14. Using homicide rates per 100 000 as a proxy for the prevalence of crime, the figure shows that there is essentially no correlation between crime rates and trust in government, but a significant correlation with trust in the police (r = 0.41) and the judicial system (r = 0.23).[4]

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[4]   Although this correlation is low in absolute terms, this may reflect the limits of the homicide rate as a proxy for crime more generally: homicide is both a relatively rare crime (with rates that can vary a lot from year to year with only small changes in the actual number of homicides) and not necessarily a strong proxy for non-violent crime.

Figure 14.   Institutional trust and homicide rates in OECD countries, 2006-2015
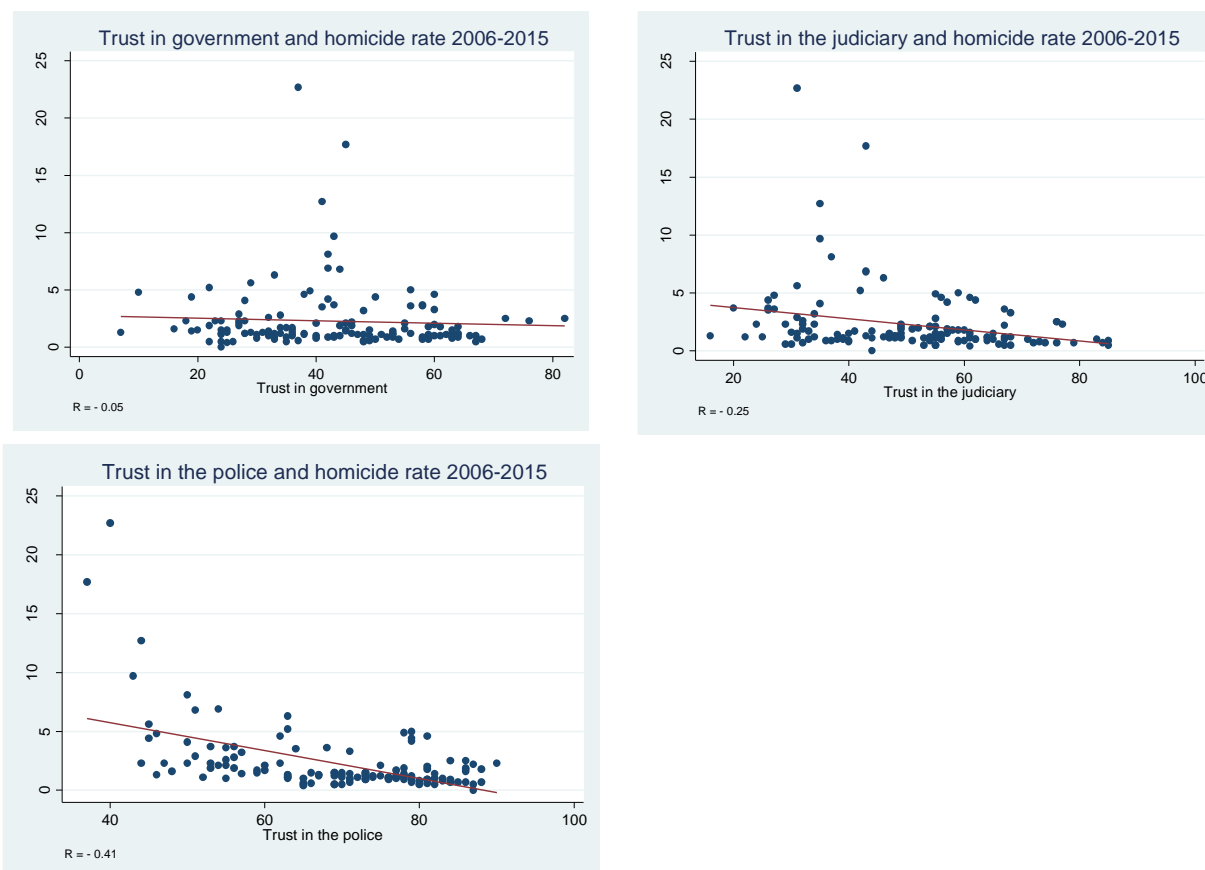
39.   A final check on the convergent validity of measures of institutional trust is to look at the relationship between these measures and overall life satisfaction. A positive correlation between trust in institutions and life satisfaction could be expected both because trusted institutions function better and are therefore more likely to be associated with other outcomes that are important to people's life satisfaction and because trustworthy government is of direct importance for how people value their lives (Frey and Stutzer, 2005, 2006). Figure 15 shows a strong positive relationship between overall life satisfaction and trust in government, trust in the judicial system and trust in the police. Although this relationship is a little stronger for trust in the judicial system (r = 0.64) than for trust in government (r = 0.62), it is lower in the case of trust in the police (r = 0.54).

Figure 15.   Institutional trust and life satisfaction in OECD countries, 2006-2015
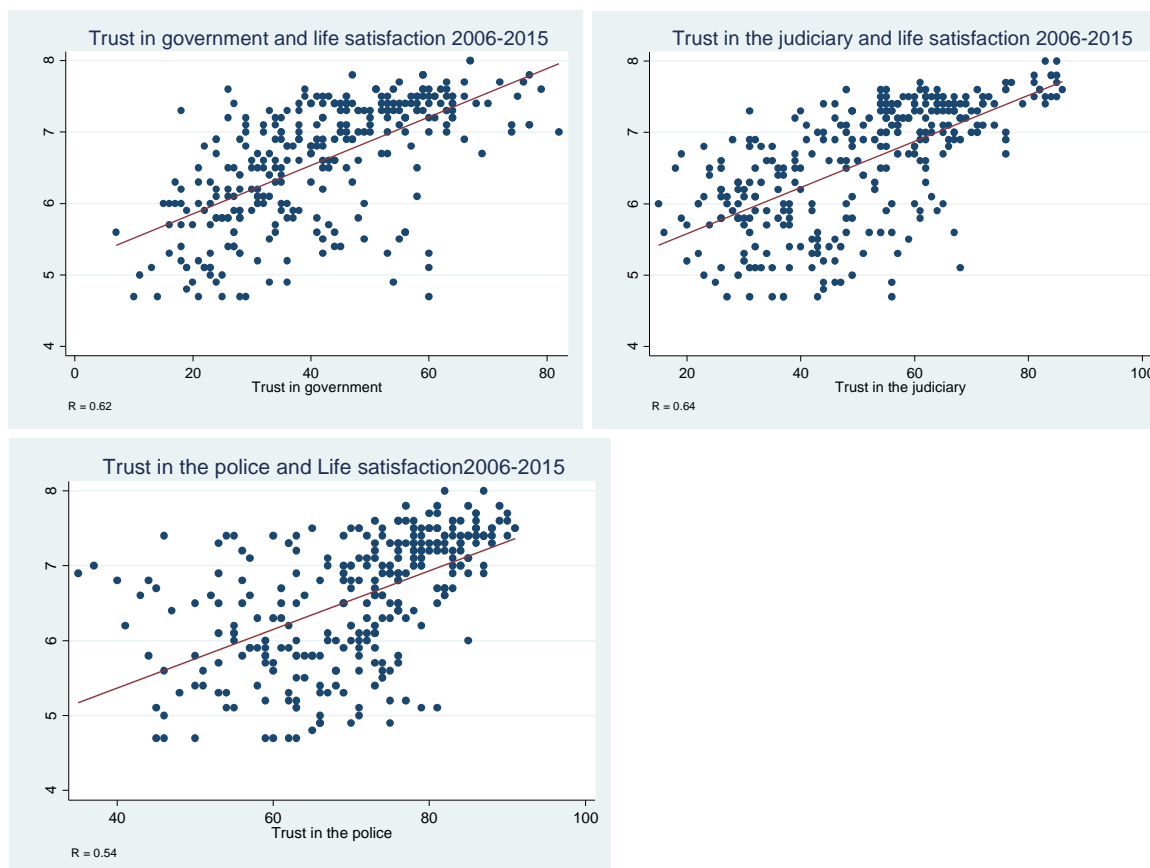
Source: Gallup (2016), Eurobarometer (2016).

Face validity

40.   Face validity addresses the degree to which a measure is intuitively plausible. This is important as it can impact on the quality and uptake of data. Poor face validity affects the quality of data because respondents may be unwilling to provide a well-considered answer to a question that seems frivolous or lacking in meaning. Similarly, data users may be unwilling to place faith in evidence that looks implausible or difficult to interpret. Hence, although face validity is a relatively "loose" and imprecise concept that is difficult to quantify, it is nonetheless of fundamental importance in establishing whether data is fit for purpose. There exists no obvious metric for assessing the face validity of a survey question, so discussion of face validity must either use qualitative or anecdotal evidence or make inferences from the behaviour of respondents. Both approaches to assessing face validity can be applied to measures of trust.

41.   On the qualitative front, the key issue is whether the measures of institutional trust in use seem intuitively plausible. This is a subjective judgement, and not one for which a definitive answer is possible. A number of objections to the wording of the standard trust questions have been raised over the years, notably by Hardin (2004). It is argued that question on institutional trust is too general to allow for a meaningful answer and in particular that, in order for respondents to provide a meaningful answer, such questions should be specific not only about the institution considered but also in terms of what activity is expected of it.

42. While these issues are important, the standard questions have been considered as meaningful by the large number of authors who work with them or who have opted to use them in surveys. These considerations, in and of themselves, do not allow conclusive judgement on the face validity of trust measures, a more quantitative approach is to look at how difficult respondents find it to answer questions on trust. A simple way of evaluating this is to look at the item-specific non-response rates for measures of trust compared to other widely used survey items. If respondents find the trust questions confusing or difficult to answer, then a higher item-specific non-response rate should be anticipated for these items.

43. Figure 16 shows the item-specific non-response rates for a range of different survey questions included in the European Social Survey. This includes questions on institutional trust (e.g. trust in the European Parliament, the United Nations, national parliament, the legal system and the police), questions related to generalised trust (e.g. most people take advantage, most of the time people are helpful, most people can be trusted) and a number of questions on topics unrelated to trust that are commonly asked in household surveys (e.g. income, marital status, gender). Income is, by a large margin, the most difficult topic for respondents to answer given the several challenges identified by the census or household survey literature such as lack of knowledge, misunderstanding and other definitional issues, recall problems, confusion and sensitivity about the topic (Moore et al. 2000). In addition, it requires combining information from very different income sources paid to different members of the same household; over 20% of respondents either refuse to answer or reply "don't know". By way of contrast, only 8% of respondents do not answer questions on marital status, while gender has a response rate of close to 100%. In all these cases, which refer to personal characteristics that are not commonly sensitive, people would know the answers and could report accurately about them.

44. In comparison to gender and marital status, questions on institutional trust did not fare particularly well. More than 10% of respondents failed to provide an answer to questions about the European Parliament or United Nations, and even the more familiar national institutions had non-response rates of between 1% and 3%. These rates are much lower than in the case of income, but well above those for gender.

**Figure 16. Item-specific non-response rates in the European Social Survey**
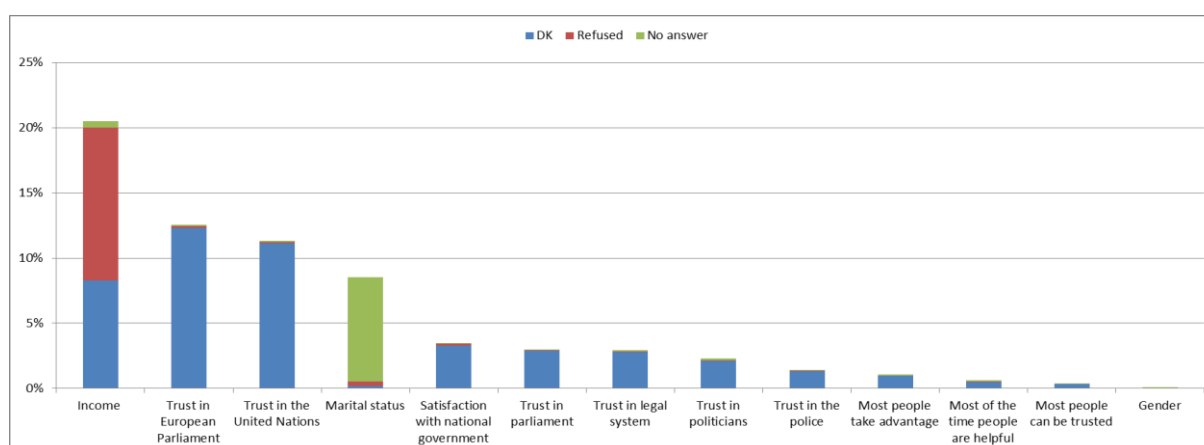
Source: European Social Survey (2016).

45. Figure 17 provides further evidence on the face validity of institutional trust by extending the analysis of non-response rates to the Gallup World Poll. This survey has a significantly larger sample than the European Social Survey, and includes a much broader cross-section of countries. The picture that emerges from the GWP analysis is very similar to that from the ESS. Income is the item with the highest item-specific non-response rate, at 19%, while marital status and education both have very low non-

response rates (at around 0.5%), and religion has a non-response rate of 3%. All of the institutional trust measures in the GWP have high item-specific non-response rates, ranging from 5% for confidence in the police to 8% for confidence in the judiciary; questions on corruption and the honesty of elections have even higher item-specific non-response rates.

Figure 17.   Item-specific non-response rates in the Gallup World Poll
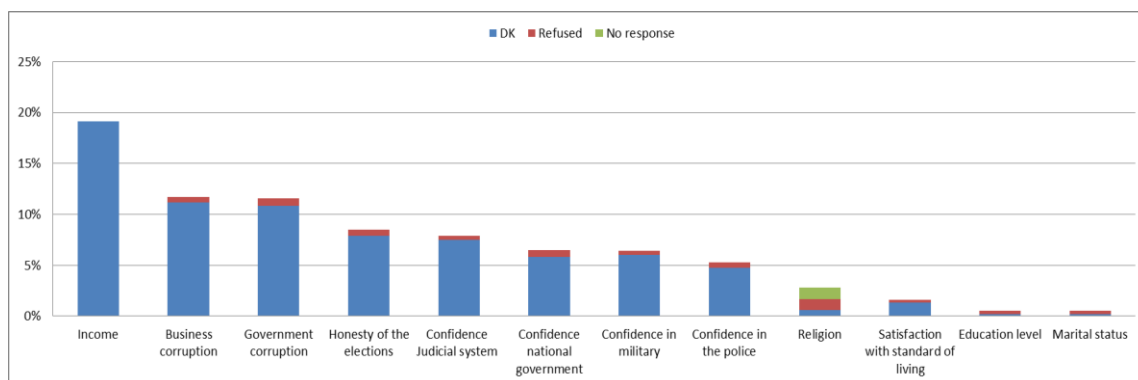
Source: Gallup (2016).

46.   The overall picture on face validity that emerges from an analysis of non-response rates is, hence, mixed. While institutional trust questions perform better than income – which is commonly collected in almost all household surveys – the item-specific non-response rates are much higher than for questions on marital status, education or gender. Even religion, which might be considered a relatively sensitive question, had a non-response rate that was less than half of most institutional trust questions. An analysis of non-response rates does not, in itself, provide conclusive evidence on face validity. High non-response rates for measures of institutional trust could simply reflect that, although the question is reasonable, many people lack adequate information to provide a meaningful answer. While non-response rates to institutional trust questions might be lower when collected by NSOs, the same would presumably apply to other questions; hence, the conclusion is not expected to change significantly if trust questions were included in official surveys. The very high non-response rates for questions on less familiar organisations such as the United Nations and the European Parliament, when compared to national institutions, provides some support for this view.

4.   Conclusions

47.   The aim of this paper was to consistently assess the accuracy of institutional trust measures. This is important because data can usefully contribute to decision making only if it provides a true picture of the issues it is intended to help assess. In contrast to measures of interpersonal trust, for which there is good evidence of validity (Knack, 2001; Naef and Schupp, 2009; Nannestad, 2008), the results from this paper present a very mixed picture for institutional trust. While the reliability of institutional trust measures is relatively good as evidenced by the high correlation coefficients of institutional trust questions asked in several household surveys, in terms of validity the evidence is less conclusive.

48.   Institutional trust measures generally perform relatively well in terms of construct validity, but the situation is less clear with respect to face validity. There is thus good reason to believe that such measures might be biased in some circumstances, and for a number of key aspects of validity there is simply no evidence one way or the other. For this reason, despite the relevance of measures of institutional trust, there is room to improve them in the context of official statistical systems. Meanwhile, the results suggest that such measures should be considered more experimental and should be implemented in

contexts where their experimental status is clear; this is particularly important for national statistical offices.

49.   On the other hand, the relevance of such measures suggests that they should be a high priority for further research, both in the academic community and within national statistical agencies. Many of the key methodological questions regarding the accuracy of measures of institutional trust will require the sample size and response rates that only national statistical offices are able to deliver.

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