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## REVIEW OF LARGE-SCALE ASSESSMENTS FOR COMPARATIVE STUDIES (1) – EUROPEAN AND GLOBAL DATASETS

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### INTRODUCTION

Economic globalization continuously affects a variety of fields, and in the last decades especially national education systems. Thus, education is considered a national investment and a further economic resource for enhancing economic development and overall competitiveness (Addey et al., 2017). Based on this definition, the comparison of educational systems worldwide is displayed as a necessity, and this results in the development and conducting of large-scale assessments (LSAs) in different disciplines such as Educational and Social Science. Furthermore, they are needed to stay up to date, adapt to new challenges, and improve life conditions on the national and international level.

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LSA results are presented on group level, commonly relying on sampling techniques, using statistical sampling and replication methods and utilizing item response theory to compute scale scores (International Association for the Evaluation of Educational Achievement, 2022b). Examples of such assessments are the “[...] IEA’s TIMSS, PIRLS, ICCS, and ICILS; U.S.-NAEP; OECD’s PISA, PIAAC, IELTS, TALIS, and TALIS Starting Strong Survey; SACMEC, PASEC, and ERCE.” (SpringerOpen, 2022). An overview of different large-scale assessments can be found in the collective publication named *Large-scale Assessments in Education* created by the International Association for the Evaluation of Educational Achievement (IEA) to improve education in collaboration with the Educational Testing Service (ETS) (SpringerOpen, 2022).

The present report gives an overview of the most common large-scale assessments in Educational and General Social Science followed by a discussion of their limitations and implications for implementation in one’s own research.

## EDUCATIONAL SCIENCE DATASETS

Every nation worldwide has its own educational methodologies and teaching techniques. The systematical and global comparison of educational systems by measuring the national state of knowledge can create an opportunity for improved educational policies and reforms based on LSA results (Fischman et al., 2019).

Within Educational Science, the most well-known large-scale comparative assessment is the Programme for International Student Assessment (PISA), which investigates the mathematical, reading, and science skills of 15-year-old students worldwide. Since 2000, the Organisation for Economic Co-operation and Development (OECD) has been conducting the PISA survey every three years, but the scheduled time cycle has been changed to analyze the difficulties in school systems caused by the COVID-19 pandemic. Therefore, the 2021 assessment is currently conducted in 2022 and the 2024 assessment was moved to 2025. Every round has a regularly changing focus with new content additions, such as the investigation of foreign language skills scheduled in 2025 (OECD, 2020).

Beyond the PISA studies, the EUROSTUDENT project and the International Association for the Evaluation of Educational Achievement (IEA) perform and analyze large scale assessments in the field of education all over the world. The EUROSTUDENT project is performed in and for the European Higher Education Area (EHEA) with topics related to European students’ social and economic situation (*EUROSTUDENT Social Dimension of European Higher Education - About*, 2022). The covered topics range from student characteristics to their resources and future plans (EUROSTUDENT, 2022). The newest project started in 2018 and was published in 2021, representing the seventh round in total.

The IEA is cooperating on an international as well as national level, and in comparison, they conduct, review, and publish multiple large-scale assessment studies. Their latest study named *The impact of the COVID-19 pandemic on education on education – International evidence from the Responses to Educational Disruption Survey (REDS)* deals with the still-ongoing COVID-19 pandemic and its impact on education due to school closures and reopening internationally and was recently published in 2022 (Meinck, Sabine, Ed. et al., 2022).

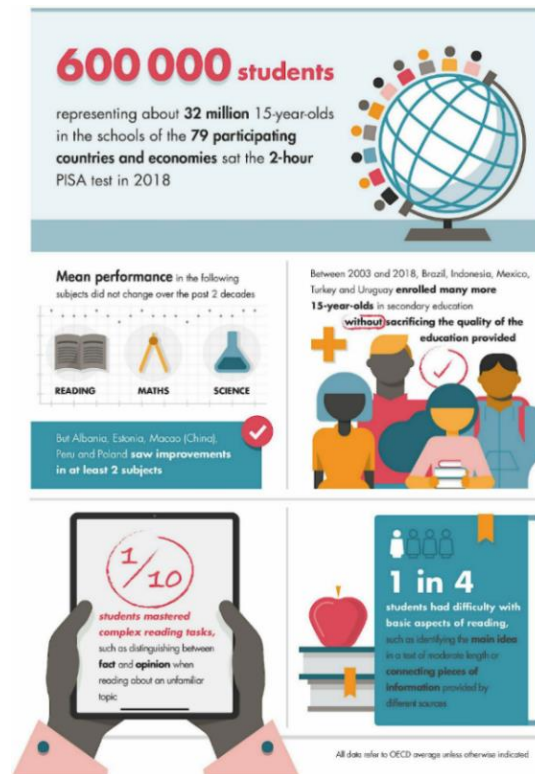
In the following, one study example for each of the above comparative assessments will be introduced and additional information sources provided.

## PISA STUDY 2018

The 2018 PISA study focuses on reading skills, specifically 15-year-old students' reading skills in a digital environment (OECD, 2022b). An overview of the overall insights and interpretations is presented by Andreas Schleicher, Director of the OECD Directorate of Education and Skills, first on an individual level and then further on a group level of the OECD participants (Schleicher, 2019). In addition, the key findings are summarized and published online by Andreas Schleicher (YouTube, 2022a). Due to the sample size, 79 countries worldwide, the results are presented in six volumes, each dealing with a lead question, for example Volume I with "What Students Know and Can Do" (OECD, 2019). The used and resulting data sets with full questionnaires and responses as well as methodology and manuals of the analytical framework, technical report, and implementation tools are publicly accessible, and their use is explicitly intended for statisticians and professional researchers conducting an analysis on the PISA 2018 data (OECD, 2022a). In addition, all previous results and associated data are openly accessible since the first study in 2000 as well as in the PISA 2018 country-specific overviews.

**Figure 1**

### *Executive Summary*



(OECD, 2019)

*Related articles:*

Mo, J. (2019). How does PISA define and measure reading literacy? *PISA in Focus*, No. 101, OECD Publishing, Paris, <https://doi.org/10.1787/efc4d0fe-en>

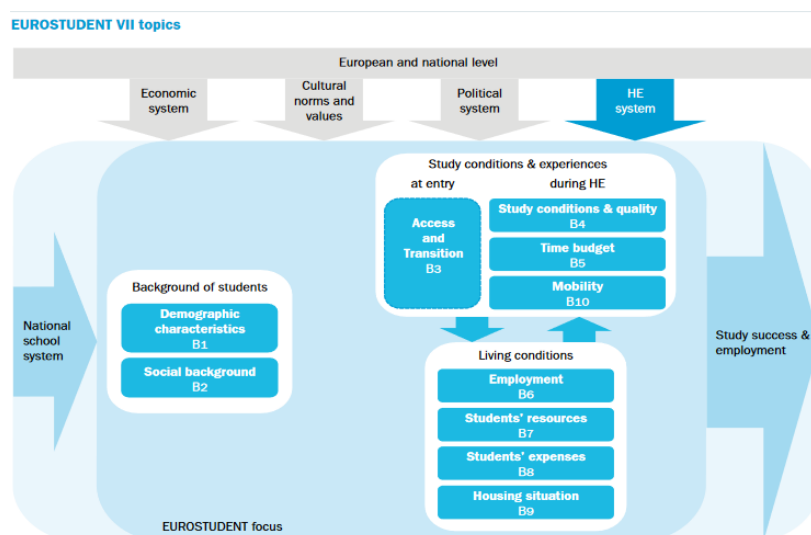
Addey, C., Sellar, S., Steiner-Khamsi, G., Lingard, B., & Verger, A. (2017). The rise of international large-scale assessments and rationales for participation. *Compare: A Journal of Comparative and International Education*, 47(3), 434–452. <https://doi.org/10.1080/03057925.2017.1301399>

## SOCIAL AND ECONOMIC CONDITIONS OF STUDENT LIFE IN EUROPE: EUROSTUDENT VII 2018–2021

In general, the aim of the EUROSTUDENT project is the improvement of the social conditions of European students in higher education, which were severely affected by the COVID-19 pandemic in the latest round of this project (Gwosc et al., 2021). The focus is on gaining information and data on students' daily problems in 26 countries of the EHEA, especially during and after COVID-19, to improve higher education in the upcoming decade. The already covered topics are this time supplemented with barriers due to the pandemic. For example, 60% of the participants do not always have a reliable internet connection, and 70% of the participants do not always have access to their program's materials (Doolan et al., 2020; Gwosc et al., 2021).

**Figure 2**

### *EUROSTUDENT VII Topics*



(Gwosc et al., 2021)

*Related articles:*

Muja, A., Mandl, S., Cuppen, J., & Hauschildt, K. (2021). *Eurostudent VII: What determines students' social integration in higher education? Thematic review.*

<https://irihs.ihs.ac.at/id/eprint/5897/>

Haltia, N., Isopahkala-Bouret, U., & Jauhiainen, A. (2022). The vocational route to higher education in Finland: Students' backgrounds, choices and study experiences. *European Educational Research Journal*, 21(3), 541–558.  
<https://doi.org/10.1177/1474904121996265>

THE IMPACT OF THE COVID-19 PANDEMIC ON EDUCATION – INTERNATIONAL EVIDENCE FROM THE RESPONSES TO EDUCATIONAL DISRUPTION SURVEY (REDS)

Since 2020, the COVID-19 pandemic has affected every aspect of life. Education has been one of them, and the impact was analyzed in the Responses to Educational Disruption Survey (REDS) (Meinck, Sabine, Ed. et al., 2022). The study aims to acquire information and perspectives of principals, teachers, and students in times of substantial school closures and reopening trials. The reviewed students are in lower secondary education, specifically grade eight, in 11 different countries across “[...] Africa, Asia, Arab region, Europe, and Latin America.” (Meinck, Sabine, Ed. et al., 2022). The comparative dataset of this study is unique in terms of the amount of data and topics covered by the participating countries, schools, teachers, and students – this includes wellbeing as well as academic progress affected by the ongoing pandemic. The datasets are for the most part openly accessible for the public. Thus, some variables are left out based on data protection rights, but they can be provided by the IEA in exchange for information about the intended use of the data and signature of an agreement not to disclose any details.

The International Association for the Evaluation of Educational Achievement (IEA) offers research services such as workshops for data analysis of large-scale assessment data, for example datasets in the REDS, due to the complexity and size of the assessment (International Association for the Evaluation of Educational Achievement, 2022a).

**Table 1**

*REDS questionnaires that addressed the eight REDS research themes*

Theme	System-level question topics	School question topics	Teacher question topics	Student question topics
1. Manifestations of the reference period within countries	Yes	Yes	No	No
2. School/teacher/student background	No	Yes	Yes	Yes
3. Impact on classroom teaching learning	Yes	Yes	Yes	Yes
4. Assessment of student learning and provision of feedback to students	Yes	Yes	Yes	Yes
5. Teacher professional support	Yes	Yes	Yes	No
6. Home engagement/support	Yes	Yes	Yes	Yes
7. Well-being	Yes	Yes	Yes	Yes
8. Persisting changes following the disruption	No	Yes	Yes	Yes

(Meinck, Sabine, Ed. et al., 2022)

*Related Sources:*

Podcast FreshEd – REDS Dirk Hastedt and Sabine Meinck:

[https://soundcloud.com/freshed-podcast/278-hastedt-meinck?utm\\_source=clipboard&utm\\_campaign=wtshare&utm\\_medium=widget&utm\\_content=https%253A%252F%252Fsoundcloud.com%252Ffreshed-podcast%252F278-hastedt-meinck](https://soundcloud.com/freshed-podcast/278-hastedt-meinck?utm_source=clipboard&utm_campaign=wtshare&utm_medium=widget&utm_content=https%253A%252F%252Fsoundcloud.com%252Ffreshed-podcast%252F278-hastedt-meinck)

Mullis, I., Martin, M., & Loveless, T. (2015). 20 Years of TIMSS. *Trends in International Mathematics and Science Study*.

## GENERAL SOCIAL SCIENCE DATASETS

LSAs are also strongly represented in Social Science due to a rise in interest. Lehdonvirta et al. (2021) address this rise in General Social Science as a result of changes in recruitment methods and impeded data collection. The implementation of LSAs simplifies the recruitment process and refers to a representative sample. Therefore, programs conducting LSAs within social science are individually presented below.

The European Social Survey (ESS) is a transnational survey across Europe conducted every two years with the aim of identifying the change in European social sciences as well as adapting to changes and improving social science research (European Social Survey, 2022b). The survey rounds and all data since it was first conducted in 2002 can be found on the ESS Data Portal (European Social Survey, 2022c).

The European Values Study (EVS) is a large-scale, cross-national, repeated cross-sectional survey research program on basic human values. It provides insights into the ideas, beliefs, preferences, attitudes, values, and opinions of citizens all over Europe. (European Values Study, 2022). Since its introduction in 1981, a core questionnaire specifically designed for the performed face-to-face interviews is used to conduct the survey in adult populations in the participating countries (European Values Study, 2018b, 2018c). A summary of EVS publications is provided within a bibliography with over 2,800 publications in English and some other national publications openly accessible online (European Values Study, 2018a).

The International Social Survey Programme (ISSP) is a transnational collaborative program in the social sciences conducting research regarding relevant and diverse topics in the field. “Its institutional members, each of them representing one nation, consist of academic organizations, universities, or survey agencies.” (International Social Survey Programme, 2022). The ISSP offers their own bibliography with publications using their data, which includes over 9,000 publications (*Publications*, 2022). They also offer their official data archive named *GESIS Data Archive for the Social Sciences (GESIS - Leibniz Institute for the Social Sciences, 2022)*. Since 2017, the International Journal of Sociology has published an annual special issue on their newest results.

Hereafter, one study example for each one of the named comparative assessments will be introduced and additional information sources provided.

## THE EUROPEAN SOCIAL SURVEY (ESS), ROUND 10 – 2020

The survey is normally based on hour-long face-to-face interviews, which were limited due to the outbreak of the COVID-19 pandemic in 2020 (European Social Survey, 2022a). In total, the 10<sup>th</sup> round covered 32 countries and where face-to-face interviews were not possible, self-completion possibilities were introduced to conduct the study. Additionally, video interviews were possible as alternatives for completing the interviews. This survey round was based on key topics from previous rounds as well as two new modules created for the 10<sup>th</sup> round. The two modules are named *Digital Social Contacts in Work and Family Life* and *Understandings and Evaluations of Democracy*.

### *Related articles:*

European Social Survey. (2022a). *ESS10-2020*. <https://doi.org/10.21338/NSD-ESS10-2020>

Boeren, E. (2021). *Are adult learners in Europe happier than non-learners? Statistical evidence from the European Social Survey*. European Educational Research Journal. Advance online publication. <https://doi.org/10.1177/14749041211014608>

## EVS 2017

The 2017 release includes data from 37 countries and two surveys only on minorities (European Values Study, 2020). The participants were interviewed in one-hour face-to-face interviews, and mixed methods were also allowed through a self-administered web survey newly used by 6 out of 37 participating countries (European Values Study, 2018c). The covered topics are *perceptions of life, attitude towards work, religion and morale, family, politics and society, national identity, and environment* (Gedeshi, Pachulia, Poghosyan, Rotman, et al., 2022). Each topic is individually defined by key points. The full release is divided into three datasets named *Integrated Dataset* (Gedeshi, Pachulia, Poghosyan, Rotman, et al., 2022), *Integrated Dataset – Matrix Design data* (Wolf et al., 2020) and *Integrated Dataset – Sensitive Data* (Gedeshi, Pachulia, Poghosyan, Kritzinger, et al., 2022). The datasets are all accessible on GESIS.

### *Related articles:*

Lomazzi, V. (2022). Improving measurements by survey infrastructures synergies: Insights from the revised gender role attitudes scale in the European Values Study 2017. *Quality & Quantity*, 1–23. <https://doi.org/10.1007/s11135-021-01312-6>

Aktürk, Ş., & Katliarou, Y. (2021). Institutionalization of Ethnocultural Diversity and the Representation of European Muslims. *Perspectives on Politics*, 19(2), 388–405. <https://doi.org/10.1017/S1537592720001334>

## INTERNATIONAL PUBLIC OPINION SURVEYS AND PUBLIC POLICY IN SOUTHERN EUROPEAN DEMOCRACIES

The aim is the analysis of the most relevant comparative social science data using the data of the Eurobarometer (Commission & Comm/b/3, 2022), ESS, ISSP, and World Values Survey (World Values Survey, 2022). In general, international studies aim to compare countries by simultaneously performing national surveys with identical methodologies, and this study investigates further the individual international assessments in comparison with each other (Fernández-Prados et al., 2019). Thereby it analyzes whether data from the above-named international surveys have any influence on public opinion and policies in southern Europe, specifically Italy, Portugal, and Spain.

**Table 2**

*Noted studies using international surveys*

Name (Acronym)	Year established (Frequency)	Topic (Sponsor)	Countries* (sample)
Eurobarometer (EB)	1973 (biannual)	Wide variety of topics related directly or indirectly to the EU (European Commission)	34 countries (33,193)
World Values Survey (WVS)	1981(every five years)	Change in values and its social and political impact. (A network of researchers around the World Values Survey Association)	50 countries (90,350)
International Social Survey Programme (ISSP)	1984(annual)	11 broad, recurrent topics such as religion, citizenship, leisure and sports, health and care, the environment, role of government, national identity, inequality, etc.(Research centres)	35 countries (36,546)
European Social Survey (ESS)	2002 (biennial)	Wellbeing, gender, domestic help, values, immigration, citizenship, social participation, etc. (Research centres and universities)	23 countries (44,387)

Source: Created by the authors.

\* Standard Eurobarometer 89 Spring 2018 (European Union, 2018). World Values Survey wave 6 2010-2014 (Inglehart et al., 2014). International Social Survey Programme: Role of Government V - ISSP 2016 (ISSP Research Group, 2018). ESS8-European Social Survey Round 8 2016/2017 (European Social Survey, 2018).

(Fernández-Prados et al., 2019)

### *Related articles:*

Cuenca-Piqueras, C., Fernández-Prados, J. S., & González-Moreno, M. J. (2020). Face-to-face versus online harassment of European women: Importance of date and place of birth. *Sexuality & Culture*, 24(1), 157-173.

Sapin, M., Joye, D., Wolf, C., & Johannes Andersen, Yanjie Bian, Ali Carkoglu, Yang-Chi Fu, Ersin Kalaycioglu, Peter V. Marsden, and Tom W. Smith (2020). The ISSP 2017 social networks and social resources Module. *International Journal of Sociology*, 50(1), 1–25. <https://doi.org/10.1080/00207659.2020.1712157>

## DISCUSSION

Large-scale assessments such as the PISA studies have a high reputation internationally, leading to countries creating educational goals around their results (Addey et al., 2017; Ertl et al., 2020; Fischman et al., 2019). The reliability of LSAs is based on their longitudinal perspective, standardization of methodologies, and statistical power (Ertl et al., 2020). The longitudinal perspective refers to the past and the future, as most LSAs, such as the mentioned PISA, EUROSTUDENT, ESS, and EVS studies, are performed worldwide for multiple cycles. The



surveys are already scheduled for their upcoming rounds years in advance, and the methodologies are adapted to societal and environmental changes – for example, the inclusion of foreign language skills in the PISA studies in 2025 (OECD, 2020) or the impact of the COVID-19 pandemic (Meinck, Sabine, Ed. et al., 2022). The LSA data, such as survey or interview results, methodologies, sample characteristics, and other data, are either openly accessible on the LSAs' official website such as in the PISA or EUROSTUDENT studies or can be accessed for research reasons by contacting the project coordinators and researchers. Language accessibility is partly provided – for example, international LSAs such as the PISA Studies publish their general outcomes as well as country-specific outcomes in English (OECD, 2022b).

By contrast, the international PISA survey as well as national LSA data are in the national language, which is not generally accessible. Additionally, LSA results face continued challenges ranging from the complexity of the analysis, testing time, missing data, and imputation to the invariance of measurement, item formats, and response sets as well as the classification of issues and different standards (Ertl et al., 2020). Due to the complexity of the analysis of LSAs, the IEA, for example, provides three kinds of workshops named *IEA workshops*, *IERI academies* and *workshops on demand* for researchers using LSA survey results for their own research (*Training | IEA.NL*, 2022). Moreover, Addey et al. (2017) have questioned the increased motivation of countries' participation leading to the rise of ILSAs and created an analytical framework with seven identified participation reasons. One rationale for participation, especially for low- and middle-income countries, is funding and aid, as participation and implementation costs are regularly donated by international sponsors. A complementing article by Fischman et al. (2019) investigates the influence of ILSAs on national education policies based on data from ILSAs conducted between 2000 and 2017 and creates a new perspective on ILSAs and their impact.

## IMPLICATIONS

It is recommended that enough time be scheduled for the analysis of the LSA and ILSA datasets as samples include thousands of participants and following datasets, manuals, guides and results. Some studies provide one complete report with hundreds of pages, such as the REDS study, or several reports and further information material, such as the PISA studies. Furthermore, to help understanding and individual investigation, the REDS Study for example maintains an analysis workshop for data analysis due to the complexity of their datasets and additionally provides further information on the performed study in the *FreshEd* podcast (*FreshEd*, 2022). The *FreshEd* podcast simplifies and summarizes a variety of educational research topics, for example Episode 70 with Gustavo Fischmann on the power and perils of large-scale assessments (Brehm, 2017) or Episode 278 with Dirk Hastedt and Sabine Meinck on conducting the REDS study (Brehm, 2022). Apart from empirical research and audio content, another source of information are shared recordings and videos on LSAs, such as the launch of the REDS results and questions answered by the professionals conducting the research, available on YouTube (YouTube, 2022b).

In summary, it can be said that the conducting of LSAs is a necessity for the development and growth of national and international policies, research, and higher education. Especially researchers and students creating their own surveys and matching instruments benefit from the presented datasets for the improvement of the field of Educational and General Social Science.

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