

PolPaL (Political Party Links) Data Model v1.1

Paul Bederke, Lea Kaftan, Jakob Mansius, Selçuk Timur Uluer & Sarah Bachmeier

As of October 2026

Table of Contents

1. Introduction 4

1.1 Data Types and Data Accessibility 5

2. PolPaL Data 6

2.1 Countries 6

2.1.1 PolPaL Countries [Countries] 7

2.2 PolPaL Entities 10

2.2.1 PolPaL Entities [Entities] 10

2.2.3 Entities in Countries [EntitiesInCountries] 13

2.2.4 Entity Names [EntityNames] 15

2.2.5 Entity Changes [EntityChanges] 17

2.2.6 PolPaL Grouping Members [GroupingMembers] 19

2.3 Links [LinksEntryToEntity] 22

2.4 Validation of Links [ValidationLinks] 24

3. External Data 25

3.1 External Projects [Projects] 25

3.2 External Datasets [Datasets] 28

3.3 External Dataset Version [Versions] 30

3.4 External Dataset Entry [Entries] 33

4. Internal Data 37

4.1 User Data [Users] 37

4.2 News [News] 40

4.3 Change Log [Changelog] 41

4.4 References [References] 43

4.5 About [About] 45

4.6 Download Log [DownloadLog] 46

4.7 Report Tickets [ReportTicket] 47

4.8 Variables [Variables] 49

4.9 Tables for Rate Limits [RateLimitTables] 50

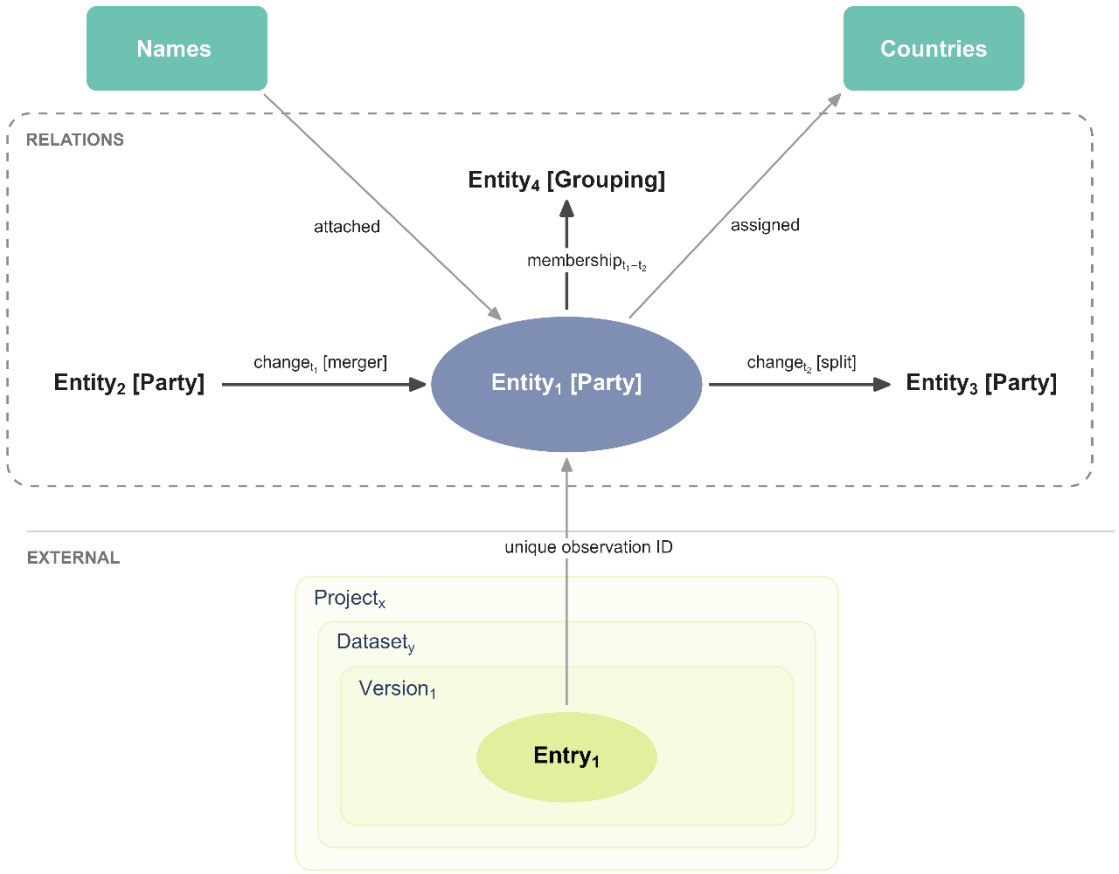
5. References 51

6. Version history 52

1. Introduction

This document explains the data models underlying the PolPaL database, adapted and extended for human readability. Generally speaking, PolPaL facilitates the linking of data on political parties while taking interdependencies into account for parties within groupings (e.g., alliances) and for splits and mergers. Ultimately, this will provide users with more flexibility in linking data and greater transparency regarding the relationships between different parties. Figure 1 visualizes the data model underlying PolPaL, in general. The following subsections explain the data model in greater detail, focusing primarily on countries, parties, external data sources, and data for internal use. Links between politicians and political parties are not yet incorporated into PolPaL. The related document → **PolPaL_DataModel-extendedVersion** provides further details.

Figure 1: The Data Model Underlying PolPaL



1.1 Data Types and Data Accessibility

The data underlying PolPaL data can be divided into three different types of data: data on political entities in the linkage key database, data that describes the entries in external databases linked to PolPaL entities, and internal data gathered to document changes, internal processes, and communication within the PolPaL database and with outsiders. **We do not save the original data from external projects, nor do we provide access to it.**

- **PolPaL data**: Non-sensitive and typically non-restricted data related to countries, political parties, and (in the future) politicians.
- **External data**: Data related to external datasets, including datasets with different versions nested in data projects.
- **Internal data**: Data related to user accounts, communication, and changes made to the database.

In addition, PolPaL provides all R scripts that were used to integrate datasets into PolPaL on a publicly accessible platform (GitHub) and the PolPaL website. This will increase the transparency and allow for better reproducibility. All changes to the database, including inter alia the creation of new PolPaL entities and links created or updated, are saved in a changelog table. Finally, we already committed during the application phase to integrate all output created during the HarDIS project phase into the SSH Open Marketplace, a marketplace that is designed to make tools and workflows accessible to the scientific community. This approach mirrors the laudable approach by Party Facts (Döring & Regel 2025), applying Open Science standards to code, data, workflows, and software alike. The software code and an anonymized database version will be made public at *GitHub* and archived at *Zenodo*/*Software Heritage*.

Data accessibility will be restricted only to protect the database and website from malicious software or data entries, and for data privacy reasons. To control data access based on user needs, we define the following roles with relations to PolPaL:

- Administrators
- Data Managers
- Editors
- Contributors
- Users
- Visitors [not logged in]

We describe their roles and their involvement within PolPaL in greater detail in the documents Governance Structure and Community Engagement. In the xlsx-Extension to this document, we also explain specific rights and user access on a variable level. **Administrators** are the only one who will have full access to all data.[1] **Data Managers** have broader access rights and are mainly tasked with the integration of external datasets. **Editors** oversee and ensure the quality of the data (PolPaL entities, PolPaL countries, linkages, additional PolPaL entity information). They have access rights to create, update, and delete content-related data. **Contributors** are responsible for linking external observations with PolPaL entities. They can also add and delete additional information about PolPaL entities. **Users** have access to the non-sensitive data that is not public.[2] However, they can't create, update, or delete any information. They can validate and comment on existing linkages between external observations and PolPaL entities. **Visitors** will have only read access to the non-sensitive, publicly available data. They can download the PolPaL linkage key database and browse it on the website without a previous log-in.

2. PolPaL Data

The following tables describe the data models underlying PolPaL countries and PolPaL entities (party & grouping).[3] Please note that the models describe the underlying data, not the data tables available for download. Data available for download is described separately in the → **PolPaL_Codebook**).

2.1 Countries

While PolPaL entities are created independently of PolPaL countries (and in fact are allowed to appear in more than one PolPaL country), we use a list of countries to facilitate the accessibility and browsability of PolPaL entities to humans. We follow the R package *countrycode* (Arel-Bundock et al. 2018) for an initial list of countries. We deviate from their list in some instances when we deem it necessary to include additional countries or split existing countries (→ **PolPaL_Codebook**).

[1] Passwords are never saved in plain text but in a hashed format.
[2] This includes information on hidden data projects, datasets, and data versions as well as the related external observations and their linkages to PolPaL entities. Hidden data will be made available for all users once satisfactory levels of data quality are reached.
[3] A model for individuals with political office will follow later.

2.1.1 PolPaL Countries [Countries]

Represents countries in the database.

variable	required	type	content	comment	on website?	for download?	source
countryId	yes	Int	Unique Identifier	Automatically assigned	no	no	PolPaL team
isCountry	yes	Boolean	true/false	Indicates whether the entry represents a country or not	yes	no	PolPaL team
isHidden	yes	Boolean	true/false	Indicates whether end users can see this country, default to false (not hidden)	no	no	PolPaL team (admin & editor)
isHiddenReason	no	String	Short comment why country is hidden	Those users who hide a country can leave an explanatory note	no	no	PolPaL team (admin & editor)
countrycodePolpal	yes	String	Three-letter unique identifier	Based on ISO 3166-1 alpha-3, adjusted for countries not assigned an ISO code	yes	yes	R package countrycode (Arel-Bundock et al. 2018); PolPaL team
countryname	yes	String	Common name of the country	Commonly used name	yes	yes	R package countrycode (Arel-Bundock et al. 2018); PolPaL team
iso2c	no	String	ISO 3166-1 alpha-2		yes	no	https://www.iso.org/iso-3166-country-codes.html
iso3c	no	String	ISO 3166-1 alpha-3		yes	no	https://www.iso.org/iso-3166-country-codes.html
iso3n	no	Int	ISO 3166-1 numeric		yes	no	https://www.iso.org/iso-3166-country-codes.html

countrycodeRPackage	no	String	Country name	Based on R-Package countrycode (*country.name.en*)	no	no	R package *countrycode* (Arel-Bundock et al. 2018)
region	no	String	UN region	Continent	yes	yes	R package *countrycode* (Arel-Bundock et al. 2018); https://unstats.un.org/unsd/methodology/m49/overview/
regionCode	no	Int	UN region code	UN M49 region code	yes	yes	R package *countrycode* (Arel-Bundock et al. 2018); https://unstats.un.org/unsd/methodology/m49/overview/
regionSub	no	String	UN sub-region	Subregion	yes	yes	R package *countrycode* (Arel-Bundock et al. 2018); https://unstats.un.org/unsd/methodology/m49/overview/
regionSubCode	no	Int	UN sub-region code	UN M49 subregion code	yes	yes	R package *countrycode* (Arel-Bundock et al. 2018); https://unstats.un.org/unsd/methodology/m49/overview/
regionIntermediate	no	String	UN intermediate region	Intermediate region	yes	yes	R package *countrycode* (Arel-Bundock et al. 2018); https://unstats.un.org/unsd/methodology/m49/overview/
regionIntermediateCode	no	Int	UN intermediate region code	Intermediate region code	Yes	yes	R package *countrycode* (Arel-Bundock et al. 2018); https://unstats.un.org/unsd/methodology/m49/overview/
comment	no	String	DEPRACTED – Comment on country	Not used but still in database (empty)	no	no	PolPaL team
userId	no	Int	User ID of who created country entry	Relation to User Table	no	no	PolPaL team

createdAt	yes	DateTime	Date the country entry was created	Creation timestamp	no	no	PolPaL team
updatedAt	yes	DateTime	Date the country entry was last updated	Last update timestamp	no	no	PolPaL team

Relations:

user: Users (The link to information on the user who created this country.)

Entries: Entries[] (The entries in external datasets that are related to this country)

EntitiesInCountries: EntitiesInCountries[] (The entities that are in this country)

2.2 PolPaL Entities

2.2.1 PolPaL Entities [Entities]

Represents PolPaL entities in the database. The initial list of PolPaL entities is based on the core party list of the 2023 stable release of Party Facts (Bederke, Döring, & Regel 2023). This initial list contains Party Facts' information on the ID, the name (short name, English name, original name), the related Wikipedia URL, and the country (see Section 2.2.3 Entities in Countries [EntitiesInCountries] and → **PolPaL_MigrationStrategy** for details).

variable	required	type	content	comment	on website?	for download?	source
polpalId	yes	Int	Unique Identifier	Automatically assigned; a copy of the partyfactsId for the initial list of PolPaL entities	yes	yes	Bederke, Döring, & Regel (2023); PolPaL team
partyfactsId	no	Int	Unique Identifier in Party Facts	Party Facts ID	yes	no	Bederke, Döring, & Regel (2023)
isHidden	yes	Boolean	true/false		yes	no	PolPaL team (admin & editor)
isHiddenReason	no	String	Short comment why entity is hidden. Those users who hide an entity are encouraged to leave an explanatory note	Why is this entity hidden?	yes	no	PolPaL team (admin & editor)
nameShort	yes	String	entity abbreviation	Latest common abbreviation of the PolPaL Entity	yes	yes	Bederke, Döring, & Regel (2023); PolPaL team

				in its original language.			
nameEnglish	yes	String	entity name English	Latest common English name of the PolPaL Entity.	yes	yes	Bederke, Döring, & Regel (2023); PolPaL team
name	yes	String	entity name	Latest commonly used (non-English) name of the PolPaL Entity.	yes	yes	Bederke, Döring, & Regel (2023); PolPaL team
entityType	yes	Enum	[PARTY; GROUPING; INEPENDENT; OTHERS; RESIDUAL; UNKNOWN; UNASSIGNED]	The type of the entity. For explanation see PolPaL Codebook	yes	yes	PolPaL team
wikipediaUrl	no	String	URL of (English) Wikipedia page		yes	yes	Bederke, Döring, & Regel (2023); PolPaL team
wikidataId	no	String	WikiData ID for the party		yes	yes	PolPaL team
color	no	String	Hex color code		yes	no	WikiData
colorCachedAt	no	DateTime	Date the color was cached		no	no	PolPaL team
comment	no	String	Additional comment on entity		after log-in	no	PolPaL team
userId	no	Int	User ID of who created the entity	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Date the party entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the party entry was last updated		no	no	PolPaL team

Relations:

GroupingMemberships: GroupingMembers[] (If a member of a grouping, this links to the grouping.)

GroupingMembers: GroupingMembers[] (If a grouping itself, this links to further information on the grouping.)

EntityChangeOld: EntityChanges[] (The entity changes where this entity was the old entity.)

EntityChangeNew: EntityChanges[] (The entity changes where this entity was the new entity.)

LinksEntryToEntity: LinksEntryToEntity[] (The external links that are related to this entity.)

EntitiesInCountries: EntitiesInCountries[] (The countries the entity is assigned to.)

EntityNames: EntityNames [] (The names of the entity in different languages or formats.)

user: Users (The user who created the entity.)

References:References[] (The references associated with the entity.)

2.2.3 Entities in Countries [EntitiesInCountries]

Represents PolPaL entities assigned to countries:

variable	required	type	content	comment	on website?	for download?	source
entityInCountryId	yes	Int	Unique identifier	Automatically assigned	no	no	PolPaL team
polpalId	yes	Int	Unique identifier	Relation to PolPaL Entity [Entities]	yes	no	Bederke, Döring, & Regel (2023); PolPaL team
countrycodePolpal	yes	String	Unique identifier	Relation to country data [Countries]	yes	no	Bederke, Döring, & Regel (2023); PolPaL team
comment	no	String	Comment	About the entity-in-country relationship	yes	no	PolPaL team
userId	no	Int	User ID of who assigned the entity to the country	Relation to User Table [Users]	no	no	PolPaL team
createdAt	yes	DateTime	Date the entity was assigned to a country		no	no	PolPaL team
updatedAt	yes	DateTime	Date the assignment was last updated		no	no	PolPaL team

Relations:

Entities: Entities (The link to information on the entity in question.)

Countries: Countries (The link to information on the country in question.)

References: References [] (The references associated with the entity-in-country relationship)

user: Users (The link to information on the user who assigned the entity to the country.)

Unique constraint:

polpalId + countrycode (PolPaL entities should only be linked once to a country.)

2.2.4 Entity Names [EntityNames]

Represents entity names in various languages. Information on the names that the entities adopted during their lifetime. Having a list of different entity names and their usage facilitates the semi-automatic linking procedure. They are used to compare the names in new datasets against the names already stored for PolPaL entities in the same country and a similar time period. Based on the similarity, the PolPaL linking tool suggests a link to an entity.

variable	required	type	content	comment	on website?	for download?	source
entityNameId	yes	Int	Unique identifier	Automatically assigned	no	no	PolPaL team
polpalId	yes	Int	Unique Identifier	Relation to PolPaL Entity	yes	yes	PolPaL team
nameShort	yes	String	Abbreviation of entity name		yes	yes	PolPaL team
name	yes	String	Name of the entity		yes	yes	PolPaL team
language	yes	Enum	ISO 639-1 language code for the entity name	Language in which the party name is written [ISO 639-1 language code]	yes	yes	PolPaL team
comment	no	String	Comment on entity name		after log-in	no	PolPaL team
startYear	no	Int	Year in which the name was adopted		yes	yes	PolPaL team
startMonth	no	Int	Month in which the name was adopted		yes	yes	PolPaL team

startDay	no	Int	Day on which the name was adopted		yes	yes	PolPaL team
endYear	no	Int	Year in which the name was dropped		yes	yes	PolPaL team
endMonth	no	Int	Month in which the name was dropped		yes	yes	PolPaL team
endDay	no	Int	Day on which the name was dropped		yes	yes	PolPaL team
userId	no	Int	User ID of who created the name entry	Relation to User Table [Users]	no	no	PolPaL team
createdAt	yes	DateTime	Date the name entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the name entry was last updated		no	no	PolPaL team

Relations:

Entities: Entities (The entity associated with the name.)

user: Users (Link to information on the user who created the name.)

References: References[] (The references associated with the entity name.)

2.2.5 Entity Changes [EntityChanges]

Represents changes between entities; To offer users more flexibility in linking information on entities, we provide information on the relationship between different PolPaL entities, in particular, information on their predecessors and successors. Although we aim for completion, we might only be able to provide this information for some entities, but not all. Missing data, hence, can both indicate that no change has taken place for a specific entity or that we have not yet incorporated a change for this specific party. Additional public documentation will make our progress in coding inter-party relations transparent.

variable	required	type	content	comment	on website?	for download?	source
entityChangeId	yes	Int	Unique identifier	Automatically assigned	no	no	PolPaL team
polpalIdOld	yes	Int	polpalId of the old party		yes	yes	PolPaL team
polpalIdNew	yes	Int	polpalId of the new party		yes	yes	PolPaL team
changeYear	yes	Int	Year of the change		yes	yes	PolPaL team
changeMonth	no	Int	Month of the change		yes	yes	PolPaL team
changeDay	no	Int	Day of the change		yes	yes	PolPaL team
changeType	yes	Enum	[SPLIT, MERGE, SPLIT_MERGE, UNKNOWN, REBRAND]	See the codebook for a definition of each of these type	yes	yes	PolPaL team
comment	no	String	Comment on the party change	Users are encouraged to provide a short description of the party change	after log-in	no	PolPaL team
userId	no	Int	User ID of who created the change entry	Relation to User Table	no	no	PolPaL team

createdAt	yes	DateTime	Date the change entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the change entry was last updated		no	no	PolPaL team

Relations:

EntityOld: Entities (The link to more information on the older entity of the two entities linked with each other through the entity change.)

EntityNew: Entities (The link to more information on the newer entity of the two entities linked with each other through the entity change.)

user: Users (The link to information on the user who created the entity change.)

References: References[] (The link to references for the entity change.)

2.2.6 PolPaL Grouping Members [GroupingMembers]

Represents the membership of a PolPaL entity (type party) in a PolPaL grouping; To offer users more flexibility in linking information on parties, we provide information on the relationship between different PolPaL entities, in particular, information on membership in PolPaL groupings. Although we aim for completion, missing data might indicate that we have not yet coded a relationship between a PolPaL entity of the type party and a PolPaL grouping, or that no relationship exists. Additional documentation will make our progress in coding intra-party relations transparent.

variable	required	type	content	comment	on website?	for download?	source
groupingMemberId	yes	Int	Unique identifier	Automatically assigned	no	no	PolPaL team
entityId	yes	Int	Unique Identifier	Relation to PolPaL Entity; polpalId of the member party [Party]	yes	yes	PolPaL team
groupingId	yes	Int	Unique identifier	Relation to PolPaL Entity; polpalId of the grouping [Grouping]	yes	yes	PolPaL team
startYear	no	Int	First year in which the PolPaL entity was a member of the grouping		yes	yes	PolPaL team
startMonth	no	Int	First month in which the PolPaL entity was a member of the grouping		yes	yes	PolPaL team
startDay	no	Int	First day in which the PolPaL		yes	yes	PolPaL team

			entity was a member of the grouping				
endYear	no	Int	Last year in which the PolPaL entity was a member of the grouping		yes	yes	PolPaL team
endMonth	no	Int	Last month in which the PolPaL entity was a member of the grouping		yes	yes	PolPaL team
endDay	no	Int	Last day in which the PolPaL entity was a member of the grouping		yes	yes	PolPaL team
comment	no	String	Comment on the grouping membership	Users are encouraged to provide a short description of the membership	after log-in	no	PolPaL team
userId	no	Int	User ID of who created the grouping entry	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Date the grouping entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the grouping entry was last updated		no	no	PolPaL team

Relations:

Entities: Entities (Links to further information on the entities who is a member of the grouping.)

Groupings: Entities (Links to further information on the entities who is the grouping.)

user: Users (The users who set the grouping membership relationship.)

References: References[] (The references associated with the grouping member.)

2.3 Links [LinksEntryToEntity]

Represent connections between entries [Entries] and PolPaL entities [Entities]:

variable	required	type	content	comment	on website?	for download?	source
linkEntriesToEntityId	yes	Int	Unique Identifier for each user	Automatically assigned	no	no	PolPaL team
uniqueObservationId	yes	String	Unique identifier	Automatically set	yes	yes	PolPaL team
polpalId	yes	Int	Unique Identifier	Automatically set	yes	yes	PolPaL team
startYear	no	Int	Start year the link is valid	Only required if external entity entry refers to multiple PolPaL entities that require a temporal specification of the link.	yes	yes	PolPaL team
startMonth	no	Int	Start month the link is valid	Only required if external entity entry refers to multiple PolPaL entities that require a temporal specification of the link.	yes	yes	PolPaL team
startDay	no	Int	Start day the link is valid	Only required if external entity entry refers to multiple PolPaL entities that require a temporal specification of the link.	yes	yes	PolPaL team
endYear	no	Int	End year the link is valid	Only required if external entity entry refers to multiple PolPaL entities that require a temporal specification of the link.	yes	yes	PolPaL team

endMonth	no	Int	End month the link is valid	Only required if external entity entry refers to multiple PolPaL entities that require a temporal specification of the link.	yes	yes	PolPaL team
endDay	no	Int	End day the link is valid	Only required if external entity entry refers to multiple PolPaL entities that require a temporal specification of the link.	yes	yes	PolPaL team
comment	no	String	Additional comment for link		after log-in	no	PolPaL team
userId	no	Int	User ID of who created link	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Date the link was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the link was last updated		no	no	PolPaL team

Relations:

Entries: Entries (The entry in external data to this link.)

Entities: Entities (The PolPaL entity to this link.)

user: Users (The user who set the link.)

ValidationLinks: ValidationLinks[] (If the link has been validated (see Validation of Links [ValidationLinks], this links to these validations.)

Unique constraint:

uniqueObservationId + polpalId (Links should not be duplicated.)

2.4 Validation of Links [ValidationLinks]

Represents the validation information on linkages.

variable	required	type	content	comment	on website?	for download?	source
validationId	yes	Int	Unique identifier	Automatically assigned	no	no	PolPaL team
linkId	yes	Int	Link ID of link that gets validated	Relation to Link Table [LinksEntryToEntity]	no	no	PolPaL team
userId	no	Int	User ID of user who validates the link	Relation to User Table [Users]	yes	no	PolPaL team
validated	yes	Enum	[APPROVED; REJECTED; NONE]	Type of validation; For more detail see Validating Tutorial.	yes	no	PolPaL team
comment	no	String	Comment	Users are encouraged to leave a comment explaining their validation decision.	yes	no	PolPaL team
createdAt	yes	DateTime	Date the validation was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the validation was last updated		no	no	PolPaL team

Relations:

Link: LinksEntryToEntity (The link to the PolPaL link that has been validated.)

User: Users (Link to the user that has validated the link.)

3. External Data

In this section, we describe the data model with which we describe external data to be integrated into PolPaL. Data entries (observations of parties in datasets) are nested within versions of a dataset, which are nested within datasets, which are – ultimately – nested within projects. For example, we treat ParlGov (Döring & Manow 2024) as a project, its three different datasets (Parties, Elections, Cabinets) as datasets, and the different versions of the datasets as dataset versions (e.g., the 2024 stable version vs. the 2022 stable version). We do not aim for integrating all versions of all datasets. Instead, this level of information is needed to ensure that users will be able to link the data to the correct version of a dataset. This is of special importance if, for example, party IDs were corrected between different versions, and hence, using different versions would lead to units being linked to different PolPaL entities. Ultimately, this will increase the transparency and replicability of analyses based on linking conducted with the help of PolPaL.

3.1 External Projects [Projects]

Represents the overarching projects different datasets are nested in.

variable	required	type	content	comment	on website?	for download?	source
projectId	yes	Int	Unique Identifier	Automatically assigned	no	no	PolPaL team
isHidden	yes	Boolean	true/false	Indicate whether publicly visible	after log-in	no	PolPaL team
isHiddenReason	no	String	Comment why hidden		after log-in	no	PolPaL team
projectKey	yes	String	Short identifier of the project (e.g., *vdem*)	All lowercase, no punctuation	yes	yes	PolPaL team

projectNameShort	yes	String	Abbreviation of the project (e.g., *V-Dem*)		yes	yes	The respective project
projectName	yes	String	Full name of the project (e.g., *Varieties of Democracy*)		yes	yes	The respective project
projectUrl	no	String	URL to project page	This is NOT necessarily the page the data can be downloaded	yes	yes	The respective project
projectDescription	no	String	Description of the project	Either from the project's website or in our own words	yes	Yes	The respective project or PolPaL team
comment	no	String	Comment		after log-in	no	PolPaL team
userId	no	Int	User ID of who created project entry	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Date the project entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the project entry was last updated		no	no	PolPaL team

Relations:

user: Users (Link to further information on the user who created the project.)

Datasets: Datasets[] (Link to datasets stemming from this project.)

Versions: Versions[] (Link to dataset versions who stem from this project.)

Entries: Entries[] (Link to entries for this dataset.)

3.2 External Datasets [Datasets]

Represents different datasets nested in projects.

variable	required	type	content	comment	on website?	for download?	source
datasetId	yes	Int	Unique Identifier	Automatically assigned	no	no	PolPaL team
isHidden	yes	Boolean	true/false	Indicate whether publicly visible	after log-in	no	PolPaL team
isHiddenReason	no	String	Comment why hidden		after log-in	no	PolPaL team
projectKey	yes	String	Short identifier of the project (e.g., *vdem*)	Automatically set	yes	yes	PolPaL team
datasetKey	yes	String	Short identifier of the dataset (e.g., *vparty*)	All lowercase, no punctuation, projectKey is first part of datasetKey (*projectKey-XXX*)	yes	yes	PolPaL team
datasetNameShort	yes	String	Abbreviation of the dataset (e.g., *V-Party*)		yes	yes	The respective dataset provider
datasetName	yes	String	Full name of the dataset (e.g., *Varieties of Party Identity and Organization*)		yes	yes	The respective dataset provider
datasetUrl	no	String	URL to dataset page	This is NOT necessarily the page the data can be downloaded	yes	yes	The respective dataset provider

datasetDescription	no	String	Short description of the dataset		yes	yes	The respective dataset provider
comment	no	String	Comment		after log-in	no	PolPaL team
userId	no	Int	user ID of who created dataset entry	Relation to User Table [Users]	no	no	PolPaL team
createdAt	yes	DateTime	Date the dataset entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the dataset entry was last updated		no	no	PolPaL team

Relations:

user: Users (Link to further information on the user who created the dataset.)

Projects: Projects (Link to the project the dataset stems from.)

Versions: Versions[] (Link to the versions of the dataset.)

Entries: Entries[] (Link to entries assigned to the dataset.)

3.3 External Dataset Version [Versions]

Represents different versions of the same dataset.

variable	required	type	content	comment	on website?	for download?	source
versionId	yes	Int	Unique identifier	Automatically generated	yes	yes	PolPaL team
isHidden	yes	Boolean	true/false	Indicate whether publicly visible	after log-in	no	PolPaL team
isHiddenReason	no	String	Comment why hidden		after log-in	no	PolPaL team
projectKey	yes	String	Short identifier of the project (e.g., *vdem*)	Automatically set	yes	yes	PolPaL team
datasetKey	yes	String	Short identifier of the dataset (e.g., *vdem-vparty*)	Automatically set	yes	yes	PolPaL team
versionKey	yes	String	Short identifier of the version (e.g., *vdem-vparty-2*)	datasetKey is first part of versionKey (*datasetKey-XXX*)	yes	yes	PolPaL team
version	yes	String	Version number/name	String field since the version naming differs between projects and datasets	yes	yes	The dataset provider or the PolPaL team
versionName	no	String	Version number/name		yes	yes	The dataset provider or PolPaL team
versionUrl	yes	String	URL to dataset page	This is NOT necessarily the page the data can be downloaded	yes	yes	The dataset provider

versionCitation	yes	Json	Citation(s) for the dataset version in APA style		yes	yes	The dataset provider
commentVersion	no	String	Comment about version [public]		after log-in	no	PolPaL team
commentEntries	no	String	Comment about Entries [public]	Should include decisions if certain observations are excluded from import or temporal dimensions left out (e.g., entryDay) due to large amount of observations.	after log-in	no	PolPaL team
userId	no	Int	user ID of who created version entry	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Date the version entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the version entry was last updated		no	no	PolPaL team

Relations:

Projects: Projects (The project this version belongs to.)

Datasets: Datasets (The dataset this version belongs to.)

Entries: Entries[] (The entries associated with this version.)

user: Users (The link to the users who created this version.)

DownloadLogs: DownloagLog[]: (Download log entries referencing this version.)

Variables: Variables[] (The variable documentation records for this version.)

Unique constraint:

projectKey + datasetKey + versionKey (All combinations of project, dataset, and version key need to be unique in the PolPaL database.)

3.4 External Dataset Entry [Entries]

Represents observations of parties in versions of dataset nested in projects.

variable	required	type	content	comment	on website?	for download?	source
entryId	yes	Int	Unique Identifier		no	no	PolPaL team
usedFile	yes	String	Name of file as downloaded		yes	yes	PolPaL team
dateDownloaded	yes	String	Date the dataset was downloaded		yes	yes	PolPaL team
projectKey	yes	String	Short identifier of the project (e.g., *vdem*)	Relation to Project Table [Projects]	yes	yes	PolPaL team
datasetKey	yes	String	Short identifier of the dataset (e.g., *vdem-vparty*)	Relation to Dataset Table [Datasets]	yes	yes	PolPaL team
versionKey	yes	String	Short identifier of the version (e.g., *vdem-vparty-2*)	Relation to Version Table [Versions]	yes	yes	PolPaL team
entryCountryVar	no	String	Name of country variable in the external data		yes	yes	The dataset version
entryCountry	no	String	Value of country variable in the external data		yes	yes	The dataset version
entryYearVar	no	String	Name of year variable in the external data		yes	yes	The dataset version
entryYear	no	Int	Value of year variablein the external data		yes	yes	The dataset version

entryMonthVar	no	String	Name of month variable in the external data		yes	yes	The dataset version
entryMonth	no	Int	Value of month variable in the external data		yes	yes	The dataset version
entryDayVar	no	String	Name of day variable in the external data		yes	yes	The dataset version
entryDay	no	Int	Value of day variable in the external data		yes	yes	The dataset version
entryEntityIdVar	yes	String	Name of party ID variable in the external data	In case the external dataset provides no IDs, entity names are used instead.	yes	yes	The dataset version
entryEntityId	yes	String	Value of party ID variable in the external data	In case the external dataset provides no IDs, entity names are used instead.	yes	yes	The dataset version
entryEntityNameShortVar	no	String	Name of short party name variable in the external data		yes	yes	The dataset version
entryEntityNameShort	no	String	Value of short party name variable in the external data		yes	yes	The dataset version
entryEntityNameEnglishVar	no	String	Name of English party name variable in the external data		yes	yes	The dataset version

entryEntityNameEnglish	no	String	Value of English party name variable in the external data		yes	yes	The dataset version
entryEntityNameVar	no	String	Name of party name variable in the external data		yes	yes	The dataset version
entryEntityName	no	String	Value of party name variable in the external data		yes	yes	The dataset version
additionalInformation	no	String	Contains additional variables formatted as one JSON		yes	no	The dataset version
countrycodePolPal	yes	String	countrycodePolpal as in Countries[]	Relation to Country Table [Countries]	yes	yes	PolPaL team
uniqueObservationId	yes	String	Unique ID to identify the entry across all entries. Created as combination of variables [versionKey--entryCountry--entryYear-entryMonth-entryDay--entryPartyIdVar--entryPartyId]		yes	yes	PolPaL team
note	no	String	Comment entry specific	This should be entry specific and not for the entire data version	yes	yes	PolPaL team

userId	no	Int	user ID of who created entry entry	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Date the entry entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the entry entry was last updated		no	no	PolPaL team

Relations:

Projects: Projects (The project this entry belongs to.)

Datasets: Datasets (The dataset this entry belongs to.)

Versions: Versions (The version this entry belongs to.)

Countries: Countries The PolPaL country this entry belongs to.)

LinksEntryToEntity: LinksEntryToEntity[]

user: Users (The link to further information on the user who integrated the entry's dataset into PolPaL.)

4. Internal Data

Internal data refers to all data gathered on users and their activity. This data is to be treated with special care due to privacy concerns. Internal data also refers to news reports published on the website by the PolPaL team.

4.1 User Data [Users]

This model will store user information, including email, username, password, and role. This data can only be accessed by PolPaL admins.

variable	required	type	content	comment	on website?	for download?	source
userId	yes	Int	Unique Identifier for each user	Automatically assigned	no	no	PolPaL team
nameFirst	yes	String	First name		no	no	User
nameLast	yes	String	Last name		no	no	User
email	yes	String	Email	Must be unique	no	no	User
username	yes	String	Username	Must be unique	no	no	User
password	yes	String	Password; PASSWORD_POLICY = /^(?=.*[a-z])(?=.*[A-Z])(?=.*\d).{8,}$/	Never stored as plain string	no	no	User
emailVerified	yes	Boolean	true/false	Has the user verified his/her email, automatically set	no	no	PolPaL team
emailVerifyToken	no	String	Token for verifying email		no	no	PolPaL team
emailVerifyExpiresAt	no	DateTime	Expiration date of token		no	no	PolPaL team
passwordResetToken	no	String	Token for resetting password		no	no	PolPaL team

passwordResetExpiresAt	no	DateTime	Expiration date of token		no	no	PolPaL team
approvedByAdmin	yes	Boolean	TRUE/FALSE	After registration set to FALSE; Log-in not possible without admin approval	no	no	PolPaL team
role	yes	Enum	[ADMIN; DATAMANAGER; EDITOR; CONTRIBUTER; USER; ROBOT]	Important for access control	no	no	PolPaL team
tokenVersion	yes	Int	Number of log-in token	Required for JWT revocation, changes upon sensitive data changes (password/role)	no	no	PolPaL team
createdAt	yes	DateTime	Date the user entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Date the user entry was last updated		no	no	PolPaL team

Relations:

Countries: Countries[]

Entities: Entities[]

GroupingMembers: GroupingMembers[]

EntityChanges: EntityChanges[]

Projects: Projects[]

Datasets: Datasets[]

Versions: Versions[]

Entries: Entries[]

LinksEntryToEntity: LinksEntryToEntity[]

ChangeLog: Changelog[]

IndividualsInCountries: IndividualsInCountries[]

EntitiesInCountries: EntitiesInCountries[]

EntityNames: EntityNames[]

News: News[]

References: References[]

ValidationLinks: ValidationLinks[]

ReportTickets: ReportTicket[]

Variables: Variables[]

4.2 News [News]

Represents news published on the PolPaL website by the PolPaL team.

variable	required	type	content	comment	on website?	for download?	source
newsId	yes	Int	Unique Identifier	Automatically assigned	no	no	PolPaL team
title	yes	String	Title of the news		yes	no	PolPaL team
content	yes	String	Text for the news		yes	no	PolPaL team
links	no	JSON	Relevant links		yes	no	PolPaL team
publishedPublicAt	yes	DateTime	Time at which the news is (to be) published	Does not have to be date of actual creation of news entry	yes	no	PolPaL team
updatedublicAt	no	DateTime	Time at which the news was updated the last time	Does not have to be date of actual update	yes	no	PolPaL team
userId	no	Int	User ID of who entered the news	Relation to User Table [Users]; "Author" of news is never shown.	no	no	PolPaL team
createdAt	yes	DateTime	Time at which the news entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Time at which the news entry was last modified		no	no	PolPaL team

Relations:

user: Users (The link to information on the user who created this news entry.)

4.3 Change Log [Changelog]

Tracks all changes made to the database. This data can only be accessed by PolPaL admins.

variable	required	type	content	comment	on website?	for download?	source
changelogId	yes	Int	Unique Identifier	Automatically assigned	no	no	PolPaL team
tableName	yes	Enum	[countries; entities; individuals; groupingMembers; entitiesInCountries; entityChanges; entityNames; individualsInCountries; individualsInEntities; linksEntriesToEntities; entries; versions; datasets; projects; news; users; references; variables]	All table names; references the table in which the update was made	no	no	PolPaL team
recordId	yes	Int	ID of changed record	References the record that was updated	no	no	PolPaL team
recordName	yes	String	Name/Key of changed record		no	no	PolPaL team
action	yes	Enum	[CREATED; UPDATED; DELETED]	ChangeActionEnum	no	no	PolPaL team
field	no	String	Name of field that was changed		no	no	PolPaL team
oldValue	no	String	Old value		no	no	PolPaL team
newValue	no	String	New value		no	no	PolPaL team

comment	no	String	Comment by user if deleting something		no	no	PolPaL team
batchId	no	String	Unique ID that identifies all changes made in one operation		no	no	PolPaL team
bulk	yes	Boolean	true if several changes were made at once, otherwise false		no	no	PolPaL team
userId	no	Int	User ID of who changed entry	Relation to User Table [Users]	no	no	PolPaL team
changedAt	yes	DateTime	Timestamp the change was done		no	no	PolPaL team

Relations:

user: Users (The link to information on the user who created this changelog entry (automatically).

4.4 References [References]

Tracks all references for data entered into PolPaL.

variable	required	type	content	comment	on website?	for download?	source
referenceId	yes	Int	Unique Identifier	Automatically assigned	no	no	PolPaL team (automated)
polpalId	no	Int	PolPaL ID for entity	Relation to entity table [Entities]	no	no	PolPaL team
entitiesInCountriesId	no	Int	Entity in Country	Relation to entities in countries table [EntitiesInCountries]	no	no	PolPaL team
entityChangeId	no	Int	Entity Change	Relation to entity change table [EntityChanges]	no	no	PolPaL team
entityNameId	no	Int	Entity Name	Relation to entity name table [EntityNames]	no	no	PolPaL team
groupingMemberId	no	Int	Group Member	Relation to grouping member table [GroupingMembers]	no	no	PolPaL team
referencedField	no	String	The field the reference is valid for	If left empty, reference valid for entire observation	yes	no	PolPaL team
type	yes	Enum	ReferenceTypeEnum [Website Literature Document Database News Other]	Type of Reference	yes	no	PolPaL team

value	yes	String	APA 7th edition citation		yes	no	
language	no	Enum	LanguageCodeEnum [ISO 639-1 language code]	Language	yes	no	
accessedAt	no	DateTime	Date the reference was last accessed		yes	no	
comment	no	String	Additional comment		no	no	
userId	no	Int	User ID	Relation to user table [Users]	no	no	PolPaL team (automated)
createdAt	yes	DateTime	Date at which the reference entry was created		no	no	PolPaL team (automated)
updatedAt	yes	DateTime	Date at which the reference entry was last modified		no	no	PolPaL team (automated)

Relations:

Entities: Entities (The reference is assigned to)

EntitiesInCountries: EntitiesInCountries (The reference is assigned to)

EntityChanges: EntityChanges (The reference is assigned to)

GroupingMembers: GroupingMembers (The reference is assigned to)

user: Users (The link to information on the user who created this reference.)

4.5 About [About]

Stores information on team members, contributors, grants and supporters.

variable	required	type	content	comment	on website?	for download?	source
id	yes	Int	Unique identifier	Automatically assigned	no	no	PolPaL team
tableName	yes	Enum	TableNameAboutEnum [member; student; contribution; grants; support]		yes	no	PolPaL team
name	no	String	Name of person		yes	no	PolPaL team
affiliation	no	String	Affiliation		yes	no	PolPaL team
time	no	String	Duration		yes	no	PolPaL team
url	no	String	External link		yes	no	PolPaL team
funding	no	String	Amout of funding		yes	no	PolPaL team
comment	no	String	Additional information field for grant/support table		yes	no	PolPaL team
createdAt	yes	DateTime	Date entry is created		no	no	PolPaL team

4.6 Download Log [DownloadLog]

Tracks all downloads made from the database.

variable	required	type	content	comment	on website?	for download?	source
id	yes	Int			no	no	PolPaL team
downloadType	yes	Enum	DownloadType (Enum) [COUNTRIES; ENTITIES; GROUPINGS; ENTRIES; SCRIPT; VERSIONS_OVERVIEW; ENTITY_NAMES]		no	no	PolPaL team
versionKey	no	String			no	no	PolPaL team
filters	yes	Json	Selected filters for download		no	no	PolPaL team
downloadedAt	yes	DateTime	Date at which the entry was created		no	no	PolPaL team

Relation:

version: Version (The version that was downloaded)

4.7 Report Tickets [ReportTicket]

Tracks all tickets opened in PolPaL.

variable	required	type	content	comment	on website?	for download?	source
id	yes	Int	ID	Automatically assigned	no	no	PolPaL team
title	yes	String	Title of ticket		after log-in (own tickets)	no	User
description	yes	String	Description of ticket		after log-in (own tickets)	no	User
url	no	String	Relation to User Table		after log-in (own tickets)	no	User
status	yes	Enum	ReportTicketStatus (Enum) [OPEN; IN_PROGRESS; RESOLVED; CLOSED]		after log-in (own tickets)	no	PolPaL team
userId	yes	Int	User ID	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Time at which the entry was created		no	no	PolPaL team
updatedAt	yes	DateTime	Time at which the entry was updated last		no	no	PolPaL team

Relations:

user: Users (The link to information on the user who created this ticket.)

4.8 Variables [Variables]

Represents all variables stored in the data model.

variable	required	type	content	comment	on website?	for download?	source
variableId	yes	Int	ID	Automatically assigned	no	no	PolPaL team
versionKey	yes	String	Version key		no	no	PolPaL team
entryEntityIdVar	yes	String	Variable		yes	no	PolPaL team
varTitle	yes	String	Variable title		yes	no	PolPaL team
varContent	yes	String	Variable description		yes	no	PolPaL team
userId	no	Int	User ID	Relation to User Table	no	no	PolPaL team
createdAt	yes	DateTime	Time at which the variable description was created		no	no	PolPaL team
updatedAt	yes	DateTime	Time at which the variable description was updated last		no	no	PolPaL team

Relations:

user: Users (The link to information on the user who created this variable information.)

Versions: Versions (Specific version this variable occurs in)

4.9 Tables for Rate Limits [RateLimitTables]

Represents all variables stored in the tables tracking rates on failed login attempts, registration attempts, downloads, and password reset requests.

variable	required	type	content	comment	on website?	for download?	source
key	yes	String	Pseudonymized IP adress		n	n	User
points	yes	Int	Counter of attempts		n	n	PolPaL system
expire	no	BigInt	Duration of limitation		n	n	PolPaL system

Models:

rate_limiter_login: Tracks failed login attempts to limit brute-force attacks.

rate_limiter_register: Tracks registration attempts to prevent mass sign-ups.

rate_limiter_download: Tracks downloads to limit excessive requests.

rate_limiter_password_reset: Tracks password reset requests to prevent abuse.

5. References

Arel-Bundock V, Enevoldsen N, Yetman C (2018). “countrycode: An R package to convert country names and country codes.” Journal of Open Source Software, 3(28), 848. https://doi.org/10.21105/joss.00848.

Bederke, Paul, Holger Döring, and Sven Regel. 2023. “Party Facts – Version 2023”, https://doi.org/10.7910/DVN/TJINLQ, Harvard Dataverse, V1, UNF:6:WobavCRL6t8D7BIHsELRCw==[fileUNF].

Döring, Holger, and Sven Regel. 2019. “Party facts: A database of political parties worldwide.” Party politics 25.2: 97-109.

Döring, Holger, and Sven Regel. 2025. “Party Facts source code: Docker image with anonymized database (Version 2024-LTS) [Computer software] (Version 1.0.0) [Data set]”. GESIS, Köln. https://doi.org/10.7802/2920.

Döring, Holger, and Philip Manow. 2024. “ParlGov 2024 Release.” Harvard Dataverse. — DOI: 10.7910/dvn/2vz5zc.

6. Version history

- Double Entries were removed.
- Tables were updated, especially concerning “required”, “on website?”, and “for download?”.
- This version corresponds to the Excel File “PolPaL_DataModel-extended-v1-1”.
- “RateLimitTables” was added.
- Added description on tables.
- Language was edited.
- Format was streamlined.