Introductory Manual
Version 1.0 for PC
Installation Guide & Software Manual

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Contents

Welcome .................................................................................................................................................. 5

Software downloads and setup .............................................................................................................. 6

Java ....................................................................................................................................................... 6

MySQL .................................................................................................................................................. 9

CharmStats Pro ..................................................................................................................................... 14

Download CharmStats Pro .................................................................................................................... 14

Connecting to MySQL ............................................................................................................................. 18

Create a CharmStats Pro shortcut on your desktop ............................................................................. 19

Uninstall the CharmStats Database ...................................................................................................... 20

Remove CharmStats Pro .......................................................................................................................... 20

The CharmStats Pro Interface ................................................................................................................ 21

Login to CharmStats Pro .......................................................................................................................... 21

The Menu bar ....................................................................................................................................... 21

The Tool Bar ....................................................................................................................................... 22

Windows .............................................................................................................................................. 23

Get ready: collect your documentation, create a plan ......................................................................... 26

Planning your harmonization .................................................................................................................. 26

Working with CharmStats Pro, step-by-step ...................................................................................... 27

Prepare your Metadata for importation .................................................................................................. 27

Import data using SPSS ............................................................................................................................ 28

Import data using Stat/Transfer for Stata ............................................................................................... 29

Import data using DDI 3.0 ....................................................................................................................... 29

Import Metadata into CharmStats ......................................................................................................... 29

Source variables .................................................................................................................................. 30

Import Measurements (Target Variables) .............................................................................................. 34

Create a Quick Charm harmonization ................................................................................................. 36

Name your project (Project Setup name required) ............................................................................. 37

search for measurements, save them to a basket ................................................................................. 38
How to search for a source variable........................................................................................................39
Assign a target variable name and label..................................................................................................40
Import your Measurement into your Project..........................................................................................41
Bring your source variable into your project ..........................................................................................41
Map the values........................................................................................................................................41
The Report and Graph features .............................................................................................................42
Publish CS Report as html......................................................................................................................43
Save Graph as Graphic file ....................................................................................................................44
Creating a target variable and multiple variables..................................................................................44
   Exercise - Create a target variable inside CharmStats ....................................................................45
Export Syntax ..........................................................................................................................................52
FinishINg and unfinishing your CharmStats Pro projects ..................................................................55
Appendix A: Fast access to Menu through Short cuts: ........................................................................56
Appendix B: Tooltip workflow..............................................................................................................57
Appendix C: List of Tags supported by the Report Generator: ...............................................................58
Appendix D: The Standard Report Template .........................................................................................60
Welcome to CharmStats Pro! This software was designed to reduce the time and effort researchers spend harmonizing and recoding variables in preparation for statistical analysis. It can be used by solo researchers or by research teams to centralize, document and process the harmonization documentation process. CharmStats Pro is also free and open-source to ensure anyone who wants to use it can do so.

CharmStats Pro is for researchers who want to quickly and easily create recoding syntax for use in statistical analysis. CharmStats Pro allows you to import the necessary metadata information to document your variable harmonizations. Once your metadata has been imported into the CharmStats Pro database you can search for the variables you need, import them into a project and quickly produce syntax(es) to harmonize variables in SPSS and Stata. CharmStats Pro auto-generates reports and graphs for all your documentation needs.

The report feature allows you to instantly create an .html or .pdf file based on the information you have used in your project. Use this features to save your documentation and bibliographical information, your notes containing the coding explanations, as well as the harmonization syntax. Share it with others at anytime, anywhere, or to post it online as a reference. The graph feature provides a visual image of your harmonization at various stages of the process. These graphs can be saved as .jpegs and used in presentations or included as part of your documentation.

This software is unique because it runs off a database that can connect several members of a team. Those who work on large-scale studies or research projects with several staff can now combined and collaborate on their variable harmonization and documentation work. To facilitate a cooperative digital environment, CharmStats Pro includes a communications suite featuring an internal email system and task manager to help team leaders organize their work.

This introductory user manual will introduce you to the CharmStats Pro workflow. We provide you with suggestions for organizing your projects for future reference and reuse. By working through the example project you will get the most out of CharmStats Pro in very short time. We believe that after investing a short amount of time learning how to create projects you’ll save time and effort. As importantly, this software should prevent you having to recreate your harmonization work. Learn more on how to get your original documentation work published for citation by reading this open access article: [http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0147795](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0147795)

The Advanced User manual, Communications Suite manual, the Administrator manual and the Database Management manual are separate documents and will be made available on the GESIS website as they are released.

As you use CharmStats we are interested in hearing about your experience with CharmStats and what additional features would be useful to you. Please contact us at [charmstats@gesis.org](mailto:charmstats@gesis.org).
SOFTWARE DOWNLOADS AND SETUP

To use CharmStats Pro you will need two free software programs: JAVA and MySQL. If you do not have these, we walk you through the download and installation process. If you do, skip to the subheading ‘CharmStats’. The estimated time to complete the three software downloads and installations on your computer is around 30 minutes (depending upon your connection speed).

For information on adding new users to your shared database, see the Advance User’s Manual (out August 2016).

JAVA

CharmStats Pro is a JAVA based application. To run CharmStats Pro use **JAVA version 1.6 or higher**. If you do not have Java 1.6 proceed with the Java installation. If your version is at least 1.6., skip ahead to the MySQL installation. Here is how you can check which version you have and how you can update to a newer version.

To check which version of Java you have use the command: java -version at the command line. Click the Start button to bring up the search box.

Type cmd.exe to bring up the program.

Start cmd.exe with a double click and you will see this window:
After the '>' prompt enter: `java –version` (note the space before the `-`).

The result will indicate which version of Java is installed on your computer.

If you do not have Java 1.6 proceed with the Java installation. If your version is at least 1.6., skip ahead to the MySQL installation. **Note:** when your Java installation completes, you may need to restart your browser (close all browser windows and re-open) to enable the Java installation.

**Need Java or need an update? Start by clicking here:**
Phases of the Java installation

These screenshots correspond to the installation steps you will see on the screen.

Phase 1

Phase 2

Phase 3

Phase 4

Phase 5

When you have completed this installation, the next step is the MySQL installation.
CharmStats software works by storing persistent information in a relational database. The MySQL DBMS was chosen as the system to manage the database and its content. MySQL is a product from ORACLE, and is free to download from [www.mysql.com](http://www.mysql.com).

Because it is specialist software, unlike JAVA, chances are that MySQL is not installed on your computer. A good rule is if you don't know whether or not you have MySQL on your computer, you probably don't. If this is the case, you have to install MySQL.

Hint: Annoyingly, sometimes the configuration of the MySQL Server fails. A common reason is that the User does not have the rights to make changes to the system. In this case, you can try to run MySQLInstanceConfig.exe on its own as the Admin.

Click on the link below to go to the website: [http://downloads.mysql.com/archives/community/](http://downloads.mysql.com/archives/community/)

Search for the 5.0.51b version.

We recommend downloading (mysql-5.0.51b-win32.zip).
At the end you may see this Setup.exe.

If you do not see this window because you do not have WinZip, go to your Downloads folder. Open the mysql-5.0.51b-win32.zip with Windows Explorer.

Right-click to open the folder with Windows Explorer, the Setup.exe should appear.

Start installation by double clicking “Setup.exe” in WinZip or in the folder “mysql-5.0.51b-win32”. The following window will open:
Press **Next** to get to this screen:

![MySQL Server 5.0 - Setup Wizard](image)

Press **Install** to continue, and this screen will appear:

![MySQL Server 5.0 - Setup Wizard](image)

Press **Next** to get the next screen:

![MySQL Server 5.0 - Setup Wizard](image)
Press **Finish** to get the next screen:

Choose Standard Configuration and press **Next**.

Check that the same options on your screen as are shown. Press **Next** to continue.
Make sure your options are the same as shown. **Select a password of your choice, and make a note of it.** You will need it later in the installation process. Write it here for future reference. 

Press **Next** to continue.

Press **Execute**.

Press **Finish** to end the installation process. Almost there! The final step will be to download and install CharmStats Pro on your laptop. We walk you through that process next.
CHARMSTATS PRO

In this section we will walk you through the following steps:

1. Download CharmStats Pro from the GESIS website

2. Install CharmStats Pro
   a. Unzip the CharmStats Pro file you downloaded
   b. Copy the folder containing CharmStats Pro to your desktop
   c. Connect CharmStats Pro to MySQL (nb: have your password from the MxSQL setup)
   d. Save CharmStats Pro as a desktop shortcut.

This tutorial includes opening .zip files. We demonstrate how to open .zip files with software already on your Windows system, however you may also open it with WinZip.

DOWNLOAD CHARMSTATS PRO

To get started with your CharmStats Pro download, please go to the GESIS website by clicking on the link below:

We will email you a username, password and link to a special web page. You download the information from this webpage due to the size of the file, which at the time of printing is about 70MB. Start by filling in the required information. (Webpage might not look as pictured.) Confirm the information entered.
When the email arrives click the link attached within to start your download.

Click on the link and you will land on this page. Enter your username, password and login.
Double click the link to start your download.

The download will start. Right-click to get the option to ‘Show in Folder’ and select it. The process for setting up CharmStats Pro is identical to how one downloads and installs QuickCharmStats. In the following images, QCS is displayed however your version will be CharmStats Pro.

When the folder opens, find the CharmStats Pro zip file. Right-click to bring up the option to 'Open with'. Left-click on Windows Explorer.

This will bring up the contents of the .zip window. The first thing to do is change the location of this folder as it will make it easier to connect CharmStats Pro to your MySQL database.
Copy the downloaded CharmStats Pro folder to your C: drive. (You may copy the CharmStats Pro folder to any drive, but we use the C: drive in this example.)

Drag and drop the CharmStats Pro folder to your C: drive.

This window will pop up:

The CharmStats Pro folder will now appear in your list.
CONNECTING TO MYSQL

Almost done! The last thing to do is connect CharmStats Pro to your MySQL database, using the password you entered in the previous section. Start by opening the cmd.exe as you did previously.

Run **cmd.exe** from the Start button prompt as before.

Double click on the program to open it.

When you click the program **cmd.exe** you will see a similar prompt. Type in the following: `cd [space] drive with CharmStats Pro \folder name\bin`.

For this example the line reads: `cd c:\qcs_download_0.9.7\bin`

Hit Enter and you will see this:

Remember your password from step #2? You will use this now and replace **your-mysql-password** in the next instruction with it. In front of the line of text that reads `c:\CharmStats Pro _Download_(CharmStats Pro version number)` type the following: `setup (space) your-mysql-password (space) mysql.sql`

For example: `setup qwertz mysql.sql`
Press Enter to finish.

CREATE A CHARMSTATS PRO SHORTCUT ON YOUR DESKTOP

Finally, we'll show you how to create a CharmStats Pro shortcut for your desktop to make it faster for you to open the program. Double click the CharmStats Pro folder to open it. Documentation and the practice dataset can be found in the file doc. Open the folder named bin.

This window will open. Open the CharmStats Pro folder by double clicking on it.

To open and run CharmStats Pro, double-click the .jar file. You can run CharmStats Pro directly from this folder location or you can create a shortcut.
Create a desktop shortcut by left-clicking the .jar file once to activate it. Right-click once to bring up this menu:

Select Create shortcut. Left click Create shortcut to activate it, use your mouse to drag it to the Desktop.

Double click on the shortcut to start CharmStats Pro.

Allow the program a few seconds to open and welcome to CharmStats Pro!

**UNINSTALL THE CHARMS DATABASE**

If you ever want to remove the CharmStats database open the command line. Type `setup your-mysql-password rem.sql`, then press [Return].

**REMOVE CHARMSTATS PRO**

To remove CharmStats Pro from your computer, delete the folder.
THE CHARMSTATS PRO INTERFACE

In this section we will review:

- How to open CharmStats Pro
- The application workspace
- How to log in
- The Menu bar
- The Tool bar

Double click the CharmStats Pro icon (jar-File) that came with your CharmStats Pro download. This will open the CharmStats Pro application window.

LOGIN TO CHARMSTATS PRO

To login go to: Menu: User → Login

The login dialog comes up:

The installed default username and password are ‘user’ and ‘user’. These can be changed later under User in the menu bar. Click ‘Save Login’ to set the default username and password to avoid logging in each time you open CharmStats Pro.

HINT!
[Alt]-[U] opens the User-Menu
[CTRL]-[L] is a short cut to the Login

THE MENU BAR

The menu bar organizes the activities of CharmStats Pro for you. Here are the actions available to someone logged in as a ‘user’.
**File:** Exit (exit the program)

**Edit:** Undo
Redo

**User:** Login
Log off
Add new User
Edit User
Add new Person
Edit Person
Change password

**Data:** Import
Import Variable
Import Measurement
Edit
Edit Variable
Edit Measurement
Export
Export Variable
Export Syntax
Export Advanced Report
Remove
Remove Variable
Remove Measurement

**Project:** Create new project
Open project
Close project
Save project
Finish
Remove
Add Participant
*(Project must be opened)*
Edit Participant
*(Project must be opened)*

**Basket:** Open My Basket
Close My Basket
Save My Basket
Empty My Basket
Empty Project Basket
Empty Temp Basket

**Search:** Search
Browse
Variables
Variables in Projects
Comments
Comments in Projects
Variable Comparison

**Extra:** Interface settings
Font size
Language
Graph

**Help:** Help
About

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**THE TOOL BAR**

The Tool bar icons are designed to speed your workflow. Some icons will not work unless a certain stage of a project has been completed (e.g. export syntax activates after mapping is confirmed).

Create new Project  
Save Project  
Open Project
CharmStats Pro helps you organize all your information so everything you need in one place when you harmonize your variables. Each project contains 1 target variable and at least 1 source variable. Think of projects as folders that contain all the metadata and mappings you need.

**Project window**

Newly created projects appear in the Unfinished Projects folder. Projects are listed in alphabetical order. This list is updated as new projects are created.

When a Project is created, the Menu tab Project provides additional actions, Finish and Remove. Once a harmonization is completed, users Finish their projects, locking them to any further changes. Finished projects can be searched, saved to the Finished Projects folder and opened. To delete an unfinished project, open it and select Remove. Confirm Remove in the dialogue box.

To help you organize your harmonization projects, in CharmStats Pro you can create and name new folders around a specific study, a time period or geographical location. Whatever you like. You can move your project(s) into the new folder and add new projects to it. See the Advanced User Manual (out August 2016) for more on creating new folders and moving projects between folders.

**Basket window**

*Temp Basket*

Under the Project(s) window is the Temp Basket window. After doing a Search, users save target and source variables of interest to this basket. The Temp Basket holds target and source variables until you log out of your session. Variables sent to the Temp Basket are not saved when you close your CharmStats Pro session, hence the ‘temp’ in the name.
If your Temp Basket becomes overly full while you are working on your harmonizations you can empty it by going to Basket on the menu bar and clicking Empty Temp Basket.

**My Basket**

The My Basket feature allows you to save variables for work across multiple work sessions. To switch from the default ‘Temp Basket’ click on Basket in the menu bar. The Temp Basket will be replaced with My Basket. Source and target variables saved here will be stored after your session has ended and can be retrieved by opening My Basket again. Once My Basket has been open other features in the menu dropdown become activated. You can click Close My Basket if you want to return to using the Temp Basket. You can update the list of variable stored to your basket by clicking Save My Basket. To clear the list of variables you have stored to My Basket, click Empty My Basket.

**Project Basket**

See the Advanced User Manual (out August 2016) for more information on the Project Basket.

**Forms window**

Most of the work you do in CharmStats Pro will take place in the Forms window. The workflow moves from left to right, starting with the Project Setup. This is the area where you will import variable metadata, enter comments, notes and references, connect target and source response options, and confirm the mapping before exporting sytaxes or generating graphs. CharmStats Pro was designed to produce the syntax and documentation needed to conduct analysis as quickly as possible. The Forms window will be reviewed in detail in below.

**Graph window**

The Graph window displays your harmonization visually. These graphs can be saved as .jpegs and incorporated into presentations or articles. This is an example graph.
Maximize your efficiency! Not only does CharmStats Pro do the work of visualizing your harmonization work, it also helps you by converting your metadata, notes, comments and references into a document you can store anywhere you like. Create .html links or save it as .pdf. Easily retrieve everything you need at a later time with just one click.
GET READY: COLLECT YOUR DOCUMENTATION, CREATE A PLAN

Getting the most out of CharmStats requires a bit of organization to make the most of your time. Below we present an example of how to plan for your harmonizations. In CharmStats, users harmonize the target variable to a source variable. To help keep things clear we want to introduce two terms we use in this manual:

**Measurement** – the target or harmonized variable.

**Variable** – the source variable that needs to be harmonized.

Collect the relevant information on your target and source variables to plan your harmonization. Start by inspecting the question wording, response options and other instructions or notes in the documentation. Decide how you will handle valid and invalid data (e.g. refused and don’t know responses) in both your target and source variables.

In this example we use the **cspro 1.0 practice dataset** that came with your download.

PLANNING YOUR HARMONIZATION

The CharmStats Pro download includes a practice dataset. In this example we will be recoding political science variables asking about closeness to a party. In this hypothetical example, we are interested in comparing people who do and don’t feel closer to a political party as our concept of comparison. Using the logic that if someone indicates they ‘don’t know’ if they are closer to a party they aren’t closer to a party, we will be recoding ‘Don’t know’ into ‘No’. For your first few harmonizations we recommend mapping out your coding strategy by hand before using CharmStats, then compare your intention with the CharmStats Pro graph that displays how your variables were harmonized.

**Example: Harmonizing ‘Closer to a party’ measures**

<table>
<thead>
<tr>
<th>Source: Closer to a party?</th>
<th>Target variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Yes</td>
<td>1 Yes</td>
</tr>
<tr>
<td>2 No</td>
<td>2 No</td>
</tr>
<tr>
<td>9 Don’t know</td>
<td></td>
</tr>
</tbody>
</table>
This is by-hand process is similar to what CharmStats does when it maps your source variables onto the target variable. As you gain confidence with the software you do not have to draw a map for each harmonization, but you should have some expectation of what your CharmStats Pro end-product graph will look like based on this process. Using the information on the target and source variables to structure this harmonization, we are now ready to quickly and easily harmonize our data.

WORKING WITH CHARMSTATS PRO, STEP-BY-STEP

To quickly produce your syntax, graphs and reports you need is to complete a few easy steps.

1. Import the target and source variable metadata into the CharmStats Pro database.
2. Create a new Project.
3. Search your database and save the variables you want to work with into your Temporary Basket.
4. Import your target and source variables into your Project.
5. Map your target values onto your source values.
6. Export your syntax in either SPSS or Stata/ generate a report and save it.

PREPARE YOUR METADATA FOR IMPORTATION

CharmStats Pro imports variable metadata from SPSS. One import function treats all variables as source variables, the other as target variables. It is fine for you to import the same variable as either a target or source variable into the same dataset. The software will display the target version of the variable in your target searches and the source variable version in the variable search. However, we do not recommend importing the same variable multiple times. A single variable can (and should) be used in multiple projects. Using the same variable instead of importing multiple versions not only saves time, but allows you to look back at all the projects using that variable in your dataset.

When you select a .sav file to import for harmonization you will be offered the option to import every single variable in that dataset. Therefore, if you have only a few variables to harmonize from a much larger dataset, we strongly encourage researchers to create a separate dataset containing only the variable metadata you need.

This is an efficient way to prepare your data for use in CharmStats Pro. We walk you through an efficient way to create a SPSS dataset that will streamline metadata importation. If you intend to create syntax for Stata please note that the variable name must be in small case letters.
We recommend you give some thought as to how best organize your variable metadata before working with SPSS. Your SPSS file will look similar to this:

CharmStats Pro automatically imports the following information: Name, Label, Values, Missing into MySQL. To avoid importing every variable in your dataset, we recommend creating a new .sav file that contains only the variables you want to harmonize.

Moving variable metadata is easily done with SPSS using the Copy and Paste functions. Open a new dataset in SPSS. Creating a CharmStats Pro-ready dataset is as easy as clicking copy and paste. This example (screenshots only) copies variables used in the Comparative Study of Electoral Systems (CSES) with British Election Study (BES) marital status variables for 2005 and 2010. Open the SPSS dataset with the variable(s) that you want to harmonize in the Variable View. Find the variable you require. Right click to bring up the option to Copy a variable.

Go to the new database you have created for harmonizing variables and right-click on an empty line. Select Paste to insert the new variable metadata. NOTE: Stata syntax is case sensitive. If
the variable name, e.g. C2004, includes capital letters, you can edit it to c2004 before or during the import process to make it Stata syntax compatible.

Save your new SPSS database with a name that helps you recall the content; ideally in a dedicated CharmStats Pro Harmonization folder that will hold all your harmonization inputs and outputs. You can import the variable metadata into CharmStats Pro.

**IMPORT DATA USING STAT/TRANSFER FOR STATA**

Metadata in Stata cannot be imported directly into CharmStats Pro. However, Stata files can be converted into SPSS files (.sav files). We recommend that Stata users first prepare a CharmStats Pro dataset that contains only the variables you need to harmonize and a different dataset for the measurements you want to harmonize. Here are the next steps you can take to import your data into CharmStats Pro:

1) Import your Stata metadata into the software package R and then change your .dta file into a .sav file.

2) Use Stat/Transfer to convert .dtas into .savs

3) Email the dataset to charmstats@gesis.org and we can assist you. This may take some time, therefore please put in your request 2 weeks before you need the file for work in CharmStats Pro.

**IMPORT DATA USING DDI 3.0**

Please see the CharmStats Pro Advanced User’s Manual (out August 2016).

**IMPORT METADATA INTO CHARMSTATS**

Let’s import the metadata we will need to work with the program. We will start with the source variables. In your CQS download there is a Practice Dataset folder with the file ‘CharmStats Pro practice dataset.sav’. The list of variables in this dataset is provided in the .txt file also called
CharmStats Pro practice dataset variable names and labels. **NOTE:** Stata syntax is case sensitive. If the variable name, e.g. C2004, includes capital letters, you can edit it to c2004 before or during the import process to make it Stata syntax compatible.

**SOURCE VARIABLES**

The practice dataset is located in the doc folder that came with your download. To import source variables into the CharmStats Pro database start by clicking the following:

Menu: Data → Import → Import Variable

Dialog: Select variable import source comes up. Search your desktop for the location where the CharmStats Pro practice dataset is stored (it was included in the file when you download CharmStats Pro). File name → (browse, select) → [Open]

When you click open you will be presented with a list of every variable in the dataset. If you want to import them all click Select All. To import selected variables from the list, tick the box of those variables you want and then click Import.

CharmStats Pro walks you through the steps of importing variables more clearly than the 1.0 version did. This means a few more screenshots for you; however the benefit you will also receive a report at the end of the process that details what you’ve imported. You can save this for your records to help you manage your database.
The first information dialog box informing you that variable importation has started. Click OK to continue.

The second indicates which variable metadata you will review and edit first. Click OK to bring up the imported variable’s metadata.

Dialog: Edit Variable → Variable tab → Name, Label, Type, Level, Measure

**Variable Tab.** The Edit Variable window has three tabs. The first, the Variable tab, displays the information you imported from SPSS. Please note the Missing column. If you indicate a value is a missing value (often represented by 9 or 99) and therefore invalid data, you can tick the box. You do not have to enter more metadata, however if you want to add or edit information, here are the buttons that change information on the variable level.

You can leave imported data as ‘Original’ under Type. Change the sampling level to either the individual or aggregate levels. Finally you can indicate the measurement type or change it here. Repeat this for each variable.

**Other buttons:**

**Add Value:** Edit the variable by adding a value that did not appear in the original dataset.

**Comment:** Keep your notes on coding decisions or other information by adding it to the comments section. This information will be stored with the variable.
**Definition**: Provide the theoretical definition that guides your interpretation of this measure.

**Dataset**: Enter in the study number (its permanent identifier, or PID), the study name and any other comments about the source of the data. This information is connected to the variable, not to the Study tab. Consider this the informal information on the study, and the Study tab the information you will need to provide only if you decide to publish your harmonization work as a reference.

**Reset Changes**: Undoes your changes and returns the information to what was imported.

**Apply Changes**: Confirms your changes to the database. You must press this button to continue the importation process.

**Exit ‘Edit Variable’**: Prompts the closing of the window. Confirm changes by clicking ‘Yes’.

**Help**: Not activated in this version.

**Question Tab (opt.)**

(Dialog: Edit variable → Question tab → Text, Instruction)

An optional information tab is available to record the question level information in this version of CharmStats Pro.

**Name**: If the question is given a name in the survey you can enter that here. Alternatively you can create your own name for variables of these types.

**Text**: Copy and paste the exact question wording into this area. This is helpful when the variable label contains only part of the question wording or none at all.

**Instruction**: Copy and paste any interviewer instructions here (e.g., ‘Ask all adults’ or ‘Rotate response options’). A good criteria for what is relevant information is whether the information would inform how someone replicated the question in future.

**Intention**: In this area you can make comments about what the question wording is intended to capture. This will be more important in future versions of CharmStats which will allow users to harmonize composite variables including indexes, scales and typologies.

**Definition**: If you are using a particular definition of this concept. Alternatively if it is a new measure you can specific the definition that informed it.
**Study tab (opt.)**

(Dialog: Edit variable \(\rightarrow\) Study tab \(\rightarrow\) Study title, Study area, Dates of Collection, Population, Selection, Collection Method, Collectors) \(\rightarrow\) [Save]

An optional information tab is available to record the question level information in this version of CharmStats Pro.

**Study title**: Name of the study from which you have used data. For example, British Election Study, 2010: Face-to-Face Survey.

**DOI**: The permanent identifier associated with the study (e.g. 10.5255/UKDA-SN-7529-1).

**Study area**: Here you can indicate the geographical space(s) from which the data came.

**Dates of Collection**: Information on start and finish dates of the data collection.

**Population**: Report on the population sampled (e.g. All adult GB residents).

**Selection**: Indicate the sampling method here (e.g. stratified sampling, quota sampling).

**Collection Method**: Report here whether the data were collected by phone, in-person or online.

**Collectors**: Report the academics, consortium, group or firm who collected the data.

**Source file**: Provide a link to the dataset.

**Dataset**: List the name of the dataset.

**Definition**: You can make notes here about the aims of the study.

Other information CharmStats Pro provides is a window to confirm you want to import the variable. Here you can either import the variable, skip the named variable and move on to the next or abort the whole process. If you select Abort all Imports CharmStats stops importing variables from the dataset from that point forward. To restate, selecting abort will stop all variables being imported including the one displayed in the text ‘Do you really want to import variable variablename’. After you select ‘Yes, import now’ you will see a report that your variable has been successfully imported.
Repeat this for each of the source variables you have selected from the list at the start of the importation process. When you have finished importing all the variables you have selected you will see this dialog box that indicates how many variable you have imported into the database.

A new feature of CharmStats Pro is a report that displays information on the variables you have imported. You can save this information as a separate file for later consultation or to share with colleagues.

IMPORT MEASUREMENTS (TARGET VARIABLES)

Importing target variables is nearly identical to importing source variables. The CSP 1.0 practice dataset is located in the doc folder that came with your download. To import target variables into the CharmStats Pro database start by clicking the following: Menu: Data ➔ Import ➔ Import Measurement

Select the same practice dataset used to import the source variables.

Dialog: Select Measurement for Import comes up. Click OK to continue. File name ➔ (browse, select) ➔ [Open]

When you click open you will be presented with a list of every variable in the dataset. CharmStats treats source and target variables as different types of information. This means you can import the same variable as a source or a target variable and the software will treat them as different elements in the workflow. To import them all click Select All. To import selected
variables from the list, tick the box of those variables you want and then click Import. For this example we are importing the variable PIDTARGE (recall that if you intend your syntax is compatible with Stata you MUST use small letters all variable names).

The dialog box indicates how many target variables you will review and edit. The next message indicates the importation process has started. Click OK to bring up the imported variable’s metadata.

Dialog: Edit Measurement → Name, Abbreviation, Level, Source, Kind, is Template

The Edit Measurement window displays the metadata imported from SPSS. Please note the Missing column. If you indicate a value is a missing value (often represented by 9 or 99) and therefore invalid data, you can tick the box.

Review that the variable name, label and other metadata is correct. You can leave imported data as ‘Imported’ under Type. Change the sampling level to either the individual or aggregate levels. You can indicate the measurement type or change it here. You do not have to enter more metadata, however if you want to add or edit information, here are the buttons that change information on the variable level.

NOTE: If you are importing a variable that will be used as a template for creating new target variables in future (for instance a generic 11 point scale, Likert scale or thermometer scale to be adapted for particular questions) you can indicate that ticking by ‘is Template’. For daily use when harmonizing content-filled variables, do not tick this box. Repeat for each measurement.

Other buttons:

Add Category: Edit the measurement values by adding a value that did not appear in the original dataset.
**Comment:** Keep your notes on coding decisions or other information by adding it to the comments section. This information will be stored with the variable.

**Definition:** Provide the theoretical definition that guides your interpretation of this measure.

**Dataset:** Enter in the study number (its permanent identifier, or PID), the study name and any other comments about the source of the data.

**Literature:** See Advanced User Manual.

**Reset Changes:** Undoes your changes and returns the information to what was imported.

**Apply Changes:** Confirms your changes to the database. You must press this button to continue the importation process.

**Exit ‘Edit Measurement’:** Prompts the closing of the window. Confirm changes by clicking ‘Yes’.

**Help:** Click to be taken to the online Help feature.

When you have finished making your changes, click Apply Changes. Click Exit Edit Measurement. Confirm the changes you have made by clicking ‘Yes’ when prompted by the dialog box.

Next you can chose to either import the variable, skip the named variable and move on to the next or Abort all Imports. As with importing variables, this will abort the whole process including this measurement. Any measurements imported up until you click Abort will be imported into the CharmStats Pro database. Confirm the importation by clicking ‘Yes, import now’. Each target variable you import will be confirmed. CharmStats Pro confirms the total number of measurements imported.

As with the source variable importation, CharmStats Pro produces a report with information on the measurements you have brought into your database. You can save this report for future consultation.

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**CREATE A QUICK CHARM HARMONIZATION**

Each CharmStats Pro project is built from a single **target** variable. Users can harmonize that target variable (T) to one or more source variables (S). Here we walk through a 1T to 1S variable harmonization for the concept of closer to a political
party using a dichotomous ‘Yes/ No’ target variable and a 2010 British Election Study source variable. To create a new project, click the Project button and select Create a new Project.

NAME YOUR PROJECT (PROJECT SETUP NAME REQUIRED)

Give your project a name. For better data management, we recommend you plan a project naming strategy. If you are not sure how to name your projects, we recommend a naming scheme based on the concept being harmonized, the name of the target variable study and the study (studies) name(s) of the source variable(s).

Other buttons:

Comment: Keep your notes in the comments section. This information will be stored with the variable.


Project Summary (opt.)

Project summary are not required for your projects. However, you may find it useful for future reference to document your aims, strategies and concerns. Click Next when you are ready to continue.

Concept and definition (opt.)

One concept is harmonized per project. Users may add information about the harmonized concept, including definitions and references. It is not required to complete this tab before moving on, but it is good data management practice.

Click Next when you are ready to continue.

Other buttons:

Comment: Keep your notes in the comments section. This information will be stored with the variable.

After creating your project the next step is to search for the target variable (measurement) you want to work with and the source variables you want to harmonize. You can type the variable name in the search window, part of the name or even a single letter. Metadata that matches what you typed will be displayed in the results window below.

If at any time you can’t recall how to run a search, use the Tool Tip feature. Hover your mouse over the Select: dropdown box to see the first of a series of step-by-step explanation of the process. To add measurements to your project start a search by clicking Search → Search.

In the Search window, select Measurement to search the measurement/target variables in your database. This restricts the search only to variables that you have imported as measurements or measurements you create for your own projects. When searching within Measurement or Variable, CharmStats Pro searches the data you’ve imported from the variable name and variable label. The practice dataset uses pid (party identification) in the name of the target variable. Type
pid to search your database.

Matching results will appear in the results box below. Tick the box of the target variable(s) you want to work with and click Save to Basket. After you click Save to Basket, the selected item(s) will appear in the Temp Basket. NOTE: Change your searches from 'Measurement' to 'Variable' in drop down window. You can search for as many variables as you'd like and add them to your Temp Basket.

HOW TO SEARCH FOR A SOURCE VARIABLE

Select Variable to search the source variables in your database. In the window type pid to search your database. Matching results will appear in the results box below. Tick the box of the source variable(s) you want to work with and click Save Results to Basket. After you click Save Results to Basket the selected item(s) will appear in the Temp Basket. Click Close when you are done.
ASSIGN A TARGET VARIABLE NAME AND LABEL.

A new harmonized target variable requires a unique name and label. Here we use ctap0 as the Target name and Closer to a party harmonized as the Target Label. NOTE: If you are harmonizing all your source variables to the same target variable name, the target name you enter here will be used for all source variables in this project.
IMPORT YOUR MEASUREMENT INTO YOUR PROJECT

Click **Import** to add your measurement. A new dialogue box with a list of **only** the measurements (target variables) that were saved to the Temp Basket will appear. Select the measurement you want from the drop down list and move it into the box. Click **Import** to finish.

BRING YOUR SOURCE VARIABLE INTO YOUR PROJECT

Click **QuickCharm** to bring up the Import Variable(s) window. Select your variable from the drop down menu of variables in your Temp Basket. Move the variable into the box on the right-hand side. Click Import to confirm your selection.

MAP THE VALUES

Clicking **Import** will move you to the **Data Recoding Tab** where you will map the response options of the target variable to the source. Use the dropdown boxes to map your target variable values onto your source variable values.
First **Confirm** your mapping and then click **Next**. When you hit **Next** you will be returned to the **Target Variable** screen. You can produce syntax or examine your Graph or the Report.

**THE REPORT AND GRAPH FEATURES**

The Standard Template is the default report that comes preinstalled with the CharmStats Pro application. (To see how this template was generated see the appendix ‘The Standard Report Template’.) The Project Template assumes you have created your own template from the list of approved tags and that you want to be able to find that template quickly. You can have a different template for each project if you so choose. When you click Project Template you are able to search for the template you want to import. The next time you click Project Template it takes you to the file location of your own template. To change which template is your Project Template simply locate the correct file and open it. Project Template will always link you to the most recent template you imported.

If you would like to import a template, use Import a Template to find and import the file. **Please note that any text in ALL CAPS will need to be converted to small letters for Stata syntax.**
[Open] replaces the current template with the newly selected one.

[Project Template] does the same, but stores a link to the chosen Template within the project. At a later time this template will be preselected presented in the Dialog: Import a Template.

[Edit] enables the user to change the report text manually

[Print] calls the printer dialog. Using the printer dialog, you may convert the report to other formats, e.g. PDF.

[Save] calls the save dialog. Reports are HTML-Files. Exported one can be opened in Web browsers or used for presentation on a web site.

PUBLISH CS REPORT AS HTML

The report generated by the application is in essence a web document. As such it can be stored to the file system and integrated in a web site. Press [Save] to call the Dialog: Save, then browse the file system, select a place for the document and, if necessary change the name of the document. Press [Save] again and a document is created and stored outside the CharmStats System.
SAVE GRAPH AS GRAPHIC FILE

Click on the Graph window. This opens the graph view. Pressing the buttons on the left bar, different information is shown in the graph area. The one that displays the value mapping is the Target: Source button. The graphs generated by the application can be stored to the file system.

Press [Save] to call the Dialog: Save, then browse the file system, select a place for the graphic file and, if necessary change the name. Press [Save] again and a graphic file is created and stored outside the CharmStats System. Four different graphic file formats are supported: JPG (default), GIF, PNG and BMP. A picture named “mapping.png” will be shown in the report if you include the tag #MAPPING_GRAPH# in the template.

CREATING A TARGET VARIABLE AND MULTIPLE VARIABLES

It might be the case that you don’t have a target variable to import. You can create your target variable in CharmStats and it will be added to your dataset. In this exercise we will create a target variable for using in our harmonization project.

CharmStats Pro allows you to layer multiple source variables onto a target variable. When you QuickCharm a project the software creates the connections between the target and source variables for you. To map additional source variables you must make the connections yourself. In this section we walk you through adding subsequent variables to the same project.
EXERCISE - CREATE A TARGET VARIABLE INSIDE CHARMSTATS

In the last project we used the default coding of 1 = yes and 2 = no of the target variable. However, many researchers prefer to recode their dependent variable to start at zero instead of one. The reason for this in regression models is to have consistency when interpreting across the coefficients.

Create a new project, here we’ve given it the name ‘Closer to a party 0’. A short statement explaining this was added to the project summary. For the purposes of this exercise we will not enter anything into the Concept tab, click Next to get to the Target Variable tab.

In the last example we imported the target variable metadata into our project. This time we will create the metadata inside the project.

1) Create a Target name for your harmonized target variable. Fill in the Target Label area. For example ctap0 (short for closer to a party 0 or 1)
2) Indicate whether the variable is individual or aggregate level and the measurement type.
3) Create a measurement name. This will be the name stored in the database.
4) Enter in the response values, their labels. Indicate whether they are ‘missing’ values. Use Add Category to increase the number of response values, use Remove Category to delete them.
To work with a new source variable it must be in your Basket. Use the search function to find the source variables from your dataset and save it to your basket. Use the term ‘pid’ to search within Variables from the practice dataset. Select all three source variables and save to your basket. Then click Close.

You can now import the source variable metadata into your new project. On the Target Variable tab, click Import. QuickCharm the BES variable as you did in the previous project. Use the instructions above or the Tool Tip feature to help you.

When you return to the Target Variable screen, save your project. To add a second variable, click on the Data Re-coding Step. The first tab is called D. R. Instance. The di-default is the name of the QuickCharm you just finished. Click Add Instance to create a new layer for variable harmonization.

Give the new instance a memorable name. I have named the practice project CLSR CAN to represent the closer to a party variable from the Canadian data. When you’re finished click Next. The next window asks you to connect your source variable to the overall project by importing it
under its new Instance name. Click on **D.R. Instance** and select the new layer you’ve just created.

Use the Import button on the bottom of the screen to bring up the source variables in your Basket. From the drop down box select the Canadian variable, move it over into the box and click Import to bring it into your new CLSR CAN instance. Click Next to continue.

**The Map Instances tab.**
In this window you will connect the target variable metadata to the new CLSR CAN information. The Source Instance is filled in for you. Select oi-default (same as above) from the drop down box. Click Next when finished.
**Map Attribute(s)** tab is next. Start by clicking Instance Pairing near the bottom of the window and select your new harmonization instance from the list.

The Source Attribute has been filled in; use the drop down box to connect it to your target variable. Click Next to move to the last step.

The final tab is the Map Values tab, just as it was in the QuickCharm process. This tells the software which metadata to retrieve. To bring up the new values you must select from the Instance Pairing at the bottom of the window. Map the Canadian values. Click Confirm to connect the target and source values, then click Next. Next returns you to the Target Variable screen. **Before adding the third variable, save your project.**
To make sure you feel confident adding multiple variables, let’s add a third. This time we will add the Eurobarometer variable to our CharmStats project. Click on the **Data Re-coding Step** tab. Select **D.R. Instance** and click **Add Instance**.

Give your new Instance a name. We have used CLSR EURO in the practice example. Click **Next** to proceed.

Connect your new source variable to the overall project by importing it under its new Instance name. Click **Next** to proceed.
Use the Import button on the bottom of the screen to bring up the source variables in your Basket. From the drop down box select the Eurobarometer variable, move it over into the box and click Import to bring it into your new CLSR EURO instance. Click Next to continue.

Click Next until you get to the Map Instances tab. In this window you will connect the target variable metadata to your new CLSR EURO information.
The Source Instance is filled in for you. Select oi-default (same as above) from the drop down box. Click Next when finished. The **Map Attribute(s)** tab is next. Start by clicking **Instance Pairing** at the bottom of the window and select your new harmonization instance from the list.

The Source Attribute has been filled in; use the drop down box to connect it to your target variable. Click **Next** to move to the last step.

The final tab is the Map Values tab. Bring up the new values by selecting CLSR EURO from the Instance Pairing. Map the Eurobarometer values. Click Confirm to connect the target and source values. Click Next to return to the Target Variable screen. Before doing anything else, *save your project.*
EXPORT SYNTAX

Your harmonization is done, now it is time to produce a syntax for use in your analysis. CharmStats Pro automatically generates syntax in either SPSS or Stata. NOTE: Stata syntax is case sensitive. If the variable name – in this case C2004 – includes capitals, you can edit in this window to make it Stata compatible, however it will need to be done each time you generate the syntax from scratch.

Menu: Data → Export → Export Syntax

Dialog: Export Syntax comes up (Select format with [SPSS], [STATA]) → [Edit], [Print] or [Save] → [Close]

Each time you use the syntax generator CharmStats rebuilds it from scratch. To generate a syntax for your new mapping first use the dropdown box to select which syntax you want to generate. When you select the mapping CharmStats will automatically fill in the variable information for you. Note: CharmStats uses the default target name and variable label that you provide in the Target Variable tab. If you want to create new variables from each harmonization you must hand enter that information before clicking SPSS or Stata. Alternatively you can run the syntax then click Edit to make the changes. We recommend you save unique target names as a separate, external .html files.
Report feature

The QuickCharm report syntax for multiple source variables also harmonized the target variable name and label to the information provided in the Target Variable tab. Until the 1.0 version we recommend users use the Edit button on the report function to insert the syntax they prefer to the original. Save your report in your Harmonization folder for later consultation or reference.
Graphs for multiple source variables

CharmStats Pro automatically represents all the mappings presented in a project as an output. This allows researchers to visually inspect and confirm the mappings. It also allows researchers to identify errors in coding. Save your graph in your Harmonization folder for later consultation or reference.
FINISHING AND UNFINISHING YOUR CHARMSTATS PRO PROJECTS

When a harmonization is complete you can move it from the Unfinished Projects to Finished Projects. When a project is finished it can be opened, syntax files, reports and graphs can be generated, but not edited.

To reopen a finished project to edit it again, log out as user and login as trouble (the password is trouble). Use the Search feature to find the project and save it to your Basket. Select Extras → Troubleshooting → Revoke ‘Finish’. Select your project from the list and confirm your selection.
APPENDIX A: FAST ACCESS TO MENU THROUGH SHORT CUTS:

[Alt] + f Menu File
[Alt] + e Menu Edit
  [Ctrl] + z Undo
  [Ctrl] + y Redo
[Alt] + u Menu User
  [Ctrl] + l Login
  [Ctrl] + [Alt] + u Add new User
  [Ctrl] + [Alt] + [Shift] + u Edit User
  [Ctrl] + [Alt] + p Add new Person
  [Ctrl] + [Alt] + [Shift] + p Edit Person
[Alt] + d Menu Data
  [Ctrl] + i Import Variable
  [Ctrl] + [Shift] + i Import Measurement
  [Ctrl] + e Edit Variable
  [Ctrl] + [Shift] + e Edit Measurement
  [Ctrl] + [Shift] + x Export Syntax
  [Ctrl] + [Alt] + x Export Advanced Report
  [Ctrl] + r Remove Variable
  [Ctrl] + [Shift] + r Remove Measurement
[Alt] + p Menu Project
  [Ctrl] + n Create new Project
  [Ctrl] + o Open Project
  [Ctrl] + w Close Project
  [Ctrl] + s Save
  [Ctrl] + [Alt] + m Add Participant
  [Ctrl] + [Alt] + [Shift] + m Edit Participant
[Alt] + b Menu Basket
  [Ctrl] + [Alt] + o Open My Basket
  [Ctrl] + [Alt] + w Close My Basket
  [Ctrl] + [Alt] + s Save My Basket
[Alt] + s Menu Search
  [Ctrl] + f Search...
  [Ctrl] + [Shift] + v Browse... Variable(s)
  [Ctrl] + [Alt] + v Browse... Variable(s) in Project scope
  [Ctrl] + [Shift] + c Browse... Comment(s)
  [Ctrl] + [Alt] + c Browse... Comment(s) in Project scope
[Alt] + x Menu Extra
  [Ctrl] + NumPad+ Increase Font size
  [Ctrl] + NumPad- Decrease Font size
  [Ctrl] + F12 Change Color Scheme
  [Ctrl] + m Open MessageManager
  [Ctrl] + t Open TaskManager
[Alt] + h Menu Help
  [Ctrl] + F1 Help
APPENDIX B: TOOLTIP WORKFLOW

Search:

Search dialog
#01: Select a Type of Search object
#02: Enter a Search term
#03: Choose a Scope of Search (opt.)
#04: Start Search
#05: Select Result
#06: Save Search results to Basket
#07 Close

Compare Variables dialog
#01: Select a Type of Search object
#02: Enter a Search term
#03: Choose a Scope of Search (opt.)
#04: Start Search
#05: Select Result
#06: Save Search results(s) to Basket

QuickCharm:

Target Variable Tab | Target Variable Tab
#01: Enter Target Name
#02: Enter Target Label
#03: Import Measurement
#04: QuickCharm Measurement w/ Variable

Data Re-coding Step Tab | Map Value(s) Tab
#01: Choose Instance Pairing
#02: Choose Attribute Pairing
#03: Map Value(s)
#04: Confirm mapping
#05: Next Step

Additional Harmonizations:

Data Re-coding Step Tab | D.R. Instance Tab
#01: Add Instance
#02: Enter Instance
#03: Next Step

Data Re-coding Step Tab | Variable(s) Tab
#01: Choose Instance
#02: Import Variable
#03: Next Step

Data Re-coding Step Tab | Map Instance(s) Tab
#01: Choose Target Instance
#02: Next Step

Data Re-coding Step Tab | Map Attribute(s) Tab
#01: Choose Target Instance Pairing
#02: Choose Target Attribute
#03: Next Step

Data Re-coding Step Tab | Map Value(s) Tab
#01: Choose Instance Pairing
#02: Choose Attribute Pairing
#03: Map Value(s)
#04: Confirm mapping
#05: Next Step
APPENDIX C: LIST OF TAGS SUPPORTED BY THE REPORT GENERATOR:

#USER#  #VARIABLE_NUMBERED_LIST#
#AUTHORS#  #SOURCE_VARIABLES_DATASET_DESCRIPTION#
#NICE_LIST_OF_AUTHORS#  #INST_MAPPINGS_REK#*
#TARGET_NAME#  #INST_MAPPINGS#*
#TARGET_LABEL#  #ATTR_MAPPINGS#*
#SYNTAX_SPSS#  #CHAR_MAPPINGS#*
#SYNTAX_SPSS_NUMBERED_LIST#  #MAPPINGS_TABLE_BY_SOURCE_UNSWAPPED#
#CROSS_TAB_SPSS#  #MAPPINGS_TABLE_BY_SOURCE_SWAPPED#
#SYNTAX_STATA#  #MAPPINGS_TABLE_BY_TARGET_UNSWAPPED#
#SYNTAX_STATA_NUMBERED_LIST#  #MAPPINGS_TABLE_BY_TARGET_SWAPPED#
#CROSS_TAB_STATA#  #SMALL_LOGO#
#SYNTAX_SAS#  #MEDIUM_LOGO#
#SYNTAX_MPLUS#  #LARGE_LOGO#
#PROJECT_NAME#  #MAPPING_GRAPH#
#PROJECT_SUMMARY#  #USER_PICTURE_001#...
#CONCEPT_NAME#  #USER_PICTURE_999#
#CONCEPT_DEFINITION#  #ALL_COMMENTS#
#LITERATURE#  #PROJECT_COMMENT#
#ALL_INSTANCES#*  #PROJECT_COMMENT_WITHOUT_SUBJECT#
#CS_INSTANCES#*  #PROJECT_COMMENT_SUBJECT_ONLY#
#OS_INSTANCES#*  #CONCEPT_COMMENT#
#DC_INSTANCES#*  #CONCEPT_COMMENT_WITHOUT_SUBJECT#
#MEASUREMENT#  #CONCEPT_COMMENT_SUBJECT_ONLY#
#MEASUREMENT_NAME#  #LIT_COMMENT#
#MEASUREMENT_SAMPLING_LEVEL#  #LIT_COMMENT_SUBJECT_ONLY#
#MEASUREMENT_LEVEL#  #TARGET_COMMENT#
#MEASUREMENT_RESPONSE_OPTION#  #TARGET_COMMENT_WITHOUT_SUBJECT#
#MEASUREMENT_DEFINITION#  #TARGET_COMMENT_SUBJECT_ONLY#
#TARGET_DATASET#  #DC_INST_COMMENT#
#TARGET_PID#  #DC_INST_COMMENT_SUBJECT_ONLY#  
#TARGET_DATASET_LABEL#  #DC_VAR_COMMENT#
#DIMENSIONS#  #DC_VAR_COMMENT_SUBJECT_ONLY#  
#BLUEPRINTS#  #DC_VAL_COMMENT#
#VARIABLES#  #DC_VAL_COMMENT_SUBJECT_ONLY#  
#VARIABLES#  #DC_INST_MAP_COMMENT#
#VARIABLES#  #DC_INST_MAP_SUBJECT_ONLY#
APPENDIX D: THE STANDARD REPORT TEMPLATE

CharmStatsPro: CharmStats - Coding and Harmonization of Statistics
Powered by GESIS

Project:
Project summary:
SPSS syntax:
Stata syntax:

Project Setup Tab
Project:
Project summary:
Concept:
Concept comments:
Definition:
Project comments:

Target Variable Tab
Target name:
Target label:
Target comments:
Measurement name:
Source variable: