



 AACRAO

# TECHNICAL GUIDE

for Assessing Administrative  
Holds with Data

  
Western Interstate Commission for Higher Education



# TECHNICAL GUIDE

## For Assessing Administrative Holds with Data

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### Acknowledgements

The Western Interstate Commission for Higher Education (WICHE) is grateful to the American Association of Collegiate Registrars and Admissions Officers (AACRAO) for developing and providing this technical guide. This technical guide distills the approach to research that AACRAO conducted with institutional data in a 2021 exploratory study of institutional practices impeding undergraduate student advancement (see <https://www.aacrao.org/signature-initiatives/learning-mobility/re-envisioning-transfer/impeding-student-advancement>).

This refinement of that previous approach and a corresponding Excel workbook demonstrate for institutions an approach to statistical analysis, within a one-year timeframe and in aggregate rather than via advanced regressions, and with data elements for insights as to the impact of holds on student progression and completion and by student demographics. This also includes case examples that might be relevant for users of Banner, Oracle, Colleague and CAMS Enterprise student information systems.

The data analysis tools are two of the tools for assessing administrative holds available online at <https://www.wiche.edu/administrative-holds>. This technical guide and accompanying Excel worksheet are intended as standalone tools to provide a sample structured approach of the needed data for a baseline analysis, for the staff who will conduct data collection and analysis. Other tools in the online resource center at <https://www.wiche.edu/administrative-holds> provide additional context and actionable guidance for those planning an institutional assessment of holds.

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# INTRODUCTION

This field-tested technical guide was created to help institutions identify the data and analytical skillset required to examine their undergraduate-student-level-transcript and registration-hold data. The results of these analyses are intended to be used by an institution to understand how hold practices are uniformly impacting the undergraduate-student population from a statistical perspective and to help determine if policy or practice revisions are needed. These analyses should be conducted hand-in-hand with undergraduate-student-focus groups and cross-functional staff discussions about current practices.

There are a number of ways these data can be analyzed. This technical guide addresses three- ordinary least squares and logistic regression for statistical analysis, and cross tabulation for descriptive information. If your institution has the ability to engage in other forms of statistical analysis, we encourage you to do so. The resources in this guide about ways to prepare the data for analysis are useful, regardless of the statistical approach used.



**TIP: This guide should be used in conjunction with the additional resources for doing holds evaluations that are available in the *No Holding Back* [resource center](#).**

## Key Policy and Practice Questions to Consider When Conducting these Analyses

- ▶ Is there a type of hold placed on all students on a recurring basis (advising, billing)? If so, how will you account for this practice in your analyses of the students impacted?
- ▶ Are holds of the same type and purpose placed on a student's record more than once a term? If so, how will this affect your analysis of hold use?
- ▶ Are multiple hold codes used to document a transaction (double-entry bookkeeping)?
- ▶ Are student accounts sent to collections? If so, how are holds impacted when a student's account is sent to collections? Is the hold zeroed out or recharacterized as a new type of hold?
- ▶ Is debt ever written off? What happens to the account when a student's debt is written off?
- ▶ Did any special situation occur in the analysis year, such as the application of "special funds" to overdue accounts to remove the holds for all students, or a portion of students, or to reduce the debt by a uniform amount (e.g., Higher Education Emergency Relief Funding (HEERF))?



**TIP: See the worksheets and tools in the *No Holding Back* [resource center](#) for other possible considerations.**

## Skills and Resources Necessary for the Work

- ▶ The hold processes must be well understood before the data is extracted for analysis, including:
  - Identifying the official source of the data needed for the analyses
  - Identifying who applies holds
  - Identifying who removes holds
  - Determining under what circumstances holds are applied and removed
  - Understanding if the practice of applying and removing holds is universal or varies by department
  - Identifying which holds impact registration, transcripts or both
  - Identifying “in/out” hold transactions; for example, a hold that expires at the end of a month then is reinstated at the beginning of the next month because it was not resolved
  - Ability to identify a dollar amount associated with any debt-related holds
  - Identifying the date the hold was applied, and when it was removed, relative to a particular academic year
  - Determining if a hold is expired or deleted when it is removed (If deleted, the analyses described in this document are not possible.)
  - Identifying the data needed for analyses
  - Determining where the necessary data resides (in the student information system SIS, data warehouse, both, or somewhere else)
  - Determining how to extract and collate the data for analyses
- ▶ Ability to perform moderately complex analyses in Excel (or another analysis tool) including mathematical functions, ability to use the Data Analysis toolkit and work with filters and pivot tables
  - Ability to interpret results of the statistical analyses
- ▶ Ability to complete and manipulate cross tabulations using any statistical solution of your choosing.
  - Ability to interpret results of the statistical analyses
- ▶ Ability to perform basic logistic regression using a statistical package reporting odds ratios
  - Ability to interpret results of the statistical analyses



**TIP: Find ideas for other approaches to analysis in the [No Holding Back resource center](#) if you have significant limitations in your data or the capacity to analyze it.**

# DATA-COLLECTION WORKBOOK

There is no single methodology for collecting data. Practice will vary by institution and student information system (SIS) configuration. Each institution's SIS collects and documents holds in a different manner. In addition, configuration and operational decisions have an impact on where the needed data will reside. Sometimes data resides in tables within the SIS; others move the requisite data from the SIS into a data warehouse accessible by reporting solutions. Some have to look multiple places for the data needed for this work.

Appendix B includes examples of where data was found by other institutions that have completed these analyses. Examples exist for Oracle, Banner, Colleague and CAMS Enterprise. For reasons mentioned, these examples are not meant to be exhaustive guidance or apply as annotated at your institution, even if you have the same SIS. They may, however, serve as starting points for work at your institution.

Use this Excel [workbook](#) to guide your data collection. The file has been configured with data validation and annotations to support data entry. The workbook includes seven spreadsheets, as described below.

- ▶ **Institutional Data** – to collect student/hold level data used for analyses
- ▶ **Data Mapping** – to document the system and data source (including field names) your institution uses to collect data on the Institutional Data spreadsheet
- ▶ **Holds** – a list of your institution's holds, by hold code, that prevent a student from registering, prevent access to an official transcript, or both simultaneously
  - Do not include as part of the Master Detail Holds file items/flags/actions that appear as "holds" in your SIS but did not prevent registration or access to a transcript. If there are significant non-hold items/flags/actions that may have an impact on student success or their experience at your institution, they could be separately rostered and incorporated in analysis.
- ▶ **Policies and Practices** – to document your institution's policies and practices to implement holds and address holds with students
- ▶ **Notes Institution** – Specific Practices – documentation of any additional information that would help clarify the information provided
- ▶ **Project Datasheet** – to document the results of the analyses performed as part of this project
- ▶ **Detailed Cross Tabs** – detailed cross tabulations by race, ethnicity and Pell

The data dictionary is included as Appendix A in this document.

# CREATING THE MASTER DETAIL HOLDS FILE

**T**he master detail holds file is the starting point for this work. It is necessary to create this file as detailed here in order to apply the remainder of the guidance as written. Deviation from this specific guidance may result in the inability to complete the analyses as described.

The master details holds file consists of:

- ▶ Data from the academic year, or years, your institution selects to examine
  - One line per student hold (not one line per student)
- ▶ Each line represents a specific hold
- ▶ Degree-seeking/certificate-seeking undergraduate students
- ▶ Full-time and part-time students
- ▶ Excludes dual-enrollment high-school students
- ▶ New and returning students
- ▶ IPEDS demographic data categories/definitions except race and ethnicity. See Appendix A.



**TIP: Start by defining your research questions or what you want to learn from your data analysis. This [worksheet](#) provides additional suggestions for types of data and analysis.**

## Cleaning and Preparing the Data File

1. Data cleaning is an important process that is tedious and often overlooked. Perform checks to ensure null (missing) data is reported as null (not 0), and as applicable, that 'unknown' values have a unique non-null value.
2. Ensure that DEBT is fully populated (0 or 1); no null values.
3. Perform checks to ensure RESLVD is fully populated (0 or 1); no null values.
4. Ensure that if DEBT = 0, AMOUNT is NULL.
5. Ensure that if DEBT = 1, AMOUNT is NOT NULL and greater than \$0.
6. Ensure every record has either TRANH and/or REGH = 1 (all records must have a hold).
  - Records with a 1 in both TRANH and REGH must have a 1 in BOTH
7. Ensure all data is in the expected format (no alphabet or special characters in numeric fields).
8. Ensure there are no blank spaces.

Example

TRANH	REGH	BOTH
1	1	1
1	0	0
0	1	0



# CREATING THE DISTINCT STUDENT-LEVEL-HOLD DATA FILE

Using the master detail hold file, create an additional analysis file. The new file will be the distinct student-level-data file.

The distinct student-level-data file is used to determine how many students are prevented from registering and/or are denied access to a transcript as a result of an unresolved hold. This information will also be used to determine the dollar amount and relative frequency of holds that prevented a student from registering and/or have denied the student access to a transcript.

Distinct student-level-data file.

1. Copy the master detail hold file to a new spreadsheet tab.
2. Sort the results by STUID, and use conditional formatting to identify duplicate STUIDs.
3. In cases in which duplicate STUIDs exist, examine TRANH and REGH fields. Identify and keep only record(s) with the largest AMOUNT for both TRANH and REGH for each student. If the largest amount is 0 or a negative number, keep that value.
4. Delete any additional records.
5. When all duplicates have been reviewed and deletions made, save the spreadsheet.

# CREATING THE COMPREHENSIVE STUDENT-LEVEL-HOLD DATA FILE

This file will contain student-level data for students who experienced a hold during the study timeframe, as well as those who did not. It will be used to perform cross tabulations.

## Students without holds

Add this expanded data to the cross-tabs analysis: Institutions should compare students who had holds encompassed in the Master Detail Hold file (unique students/IDs) to the universe of students who enrolled for credit in the study timeframe (e.g., degree-/certificate-seeking undergraduates or other student universe as defined above). This will identify the enrolled students who did not experience a hold. These students will be categorized as “No Hold” students, and their summary record will be added for the cross tabulations (see below for fields/values).

## Derived Categorizations

The categorical fields specified below may be derived from the student-level Master Detail Hold file records that have been compiled for the main holds analysis. IMPORTANT: Do NOT begin from the subset of students with *unresolved* debt holds retained for the “distinct student-level-data file.”

Values are specified below to accommodate the added “No Holds” student records.

## Student Characteristics

The following four fields are defined in the data dictionary included in Appendix A; they will be used “as is” for the cross tabs. The same criteria should be used to produce values for these fields for the “No Holds” students/records, as was used for Master Detail Hold records:

ENRSTD  
GENDER  
AGE  
PELL



**NOTE: Counts of students coded as “null” or “unk” should be shown in the cross tabs.**

The following fields will be derived using data captured for the Master Detail Holds records. These same criteria should be used to derive values for the “No Holds” students/records:

► **Race\_Ethnicity.** This construct reflects the 1997 OMB federal single-race/ethnicity categorizations. **ETHNIC** and **RACE** are represented in a single field, *per student*, using these derived values, and applied in this order of precedence:

- “Foreign/nonresident” (if RACE= 7)
- “Hispanic, any race” (else if ETHNIC = 1 or if student indicated as Hispanic by IPEDS schema)

For students who are *not* coded as Foreign/nonresident or Hispanic per above:

- “American Indian/Alaska Native, only race” (RACE = 1)
- “Asian, only race” (RACE = 2)
- “Black/African American, only race” (RACE = 3)
- “Native Hawaiian/Other Pacific Islander, only race” (RACE = 4)
- “White, only race” (RACE = 5)

Or:

- “Two or more races” (RACE = 6)
- “Null/unknown” (RACE = null/unk)

If multiple low numbers/cell sizes result when the combined **Race\_Ethnicity** field is cross tabulated with other fields, and multiple suppressions are necessary, collapsing the eight categories above into these alternate categories would reflect a generic definition of ‘historically underrepresented minority’:

- “Historically underrepresented minority” (Race\_Ethnicity is Hispanic, American Indian/Alaska Native, Black/African American, Native Hawaiian/Other Pacific Islander)
- “Foreign/nonresident” (RACE = 7)
- “Null/unknown” (RACE = null/unk)
- “All other” (any other ETHNIC/RACE value)

► **Student Progress.** The fields COMP, TRAN and STOP can be collapsed into a single category field, *per student*, reflecting students who are confirmed to have Completed, Transferred or Stopped out. With these derived values:

- “Completed” (COMP = 1)
- “Transferred” (TRAN = 1)
- “Stopped” (STOP = 1)
- “All other” (COMP<>1 AND TRAN<>1 AND STOP<>1)

It may not be possible to distinguish conclusively/affirmatively whether a student continued or stopped out. Categorize all other students in this “All other” unknown/indeterminate category.



**TIP:** Depending on your institution's research questions and data availability, you may wish to construct additional variables to represent student characteristics, for example: first-generation student status, dependent/independent student, major field of study, etc. You might also construct multi-variable data elements to represent intersectional student characteristics, for example a combination of race/ethnicity and Pell receipt or full-/part-time status and Pell.

## Hold Type and Resolution Fields

These fields will represent overall statuses, *per student*, within the academic-year-study cohort, as to whether a student *ever* had a type of hold and, if so, whether that type of hold(s) was/were resolved during the academic year in question.

It is important to wait to produce the following categorical fields until *after* the Master Detail Hold file has been checked to include only students/records that meet the definition: a hold prevented a student from re-/registering or prevented access to an official transcript. (When cleaned, the Master Detail Hold file should NOT include items/flags/actions that appear as "holds" in your SIS but did not prevent registration or access to a transcript.)

As written, these instructions use the fields TRANH, REGH, DEBT, RESLVD, which were already computed for the records drawn into the student-level Master Detail Hold file. These 0/1 integer fields are now used to find "sums," per-student, to determine a category for each field below, to enable discrete cross tabulations. Implicitly, TRANH, REGH, DEBT, RESLVD will all be 0 for the additional records for "No Holds" students. Values are included below to encompass these students.

► **ANYHOLD\_RSLVD** Derive one result, *per student*, as to whether the student ever had *any kind of hold* and, if so, whether all observed holds were resolved (in the study year). Derived values:

- "No Holds Student" (These student records are *added* to the data encompassed by the Master Detail Hold records, and implicitly, TRANH = 0 and REGH = 0)

Where sum of TRANH+REGH > 0 for given student (STUID):

- "Student's Hold(s) were all resolved" (sum of RESLVD = sum of TRANH+REGH)
- "Student's Hold(s) were *not* all resolved" (sum of RESLVD < sum of TRANH+REGH)

► **REGH\_RSLVD** Derive one result, *per student*, as to whether the student ever had a *registration* hold and, if so, whether the registration hold(s) was/were resolved. Derived values:

- "No Registration Holds" (This encompasses (a) students in the Master Detail Hold data who had a hold but sum of REGH for their STUID is 0; and (b) the *added* "No Holds" student records, where implicitly, REGH = 0.)
- It is not necessary to distinguish between (a) and (b) type students for the cross tabulations because their numbers are discernible by ANYHOLD\_RSLVD.

Across records where REGH > 0 for given student (STUID):

- “Student’s Registration hold(s) were all resolved” (sum of RESLVD = sum of REGH)
- “Student’s Registration hold(s) were *not* all resolved” (sum of RESLVD < sum of REGH)

▶ **TRANH\_RSLVD** Derive one result, *per student*, as to whether the student ever had a *transcript* hold and, if so, whether the transcript hold(s) was/were resolved. Derived values:

- “No Transcript Holds” (This encompasses (a) students in the Master Detail Hold data that had a hold but sum of TRANH for their STUID is 0; and (b) the *added* “No Holds” student records, where implicitly, TRANH = 0.)
- It is not necessary to distinguish between (a) and (b) type students for the cross tabulations because their numbers are discernible by ANYHOLD\_RSLVD.

Across records where TRANH > 0 for given student (STUID):

- “Student’s Transcript hold(s) were all resolved” (sum of RESLVD = sum of TRANH)
- “Student’s Transcript hold(s) were not all resolved” (sum of RESLVD < sum of TRANH)

▶ **DEBT\_RSLVD** Derive one result, *per student*, as to whether the student ever had a *debt* hold and, if so, whether the debt hold(s) was/were resolved during the study timeframe. Derived values:

- “No Debt Holds” (This encompasses (a) students in the Master Detail Hold data that had a hold but sum of DEBT for their STUID is 0; and (b) the added “No Holds” student records, where implicitly, DEBT = 0.)
- It is not necessary to distinguish between (a) and (b) type students for the cross tabulations because their numbers are discernible by ANYHOLD\_RSLVD.

Across records where DEBT > 0 for given student (STUID):

- “Student’s Debt hold(s) were all resolved” (sum of RESLVD = sum of DEBT)
- “Student’s Debt hold(s) were not all resolved” (sum of RESLVD < sum of DEBT)

# GUIDANCE FOR PERFORMING THE ANALYSES

Guidance included here is primarily for examining debt-related holds, whether those holds prevent registration, block access to an official transcript or both. Debt is an independent variable of interest for the analysis. However, the independent variable you choose to examine, using this guidance, can be any binary variable in the dataset or ones you choose to create or add. For example, you can categorize holds as student-success holds or administrative holds. Use this variable as the independent variable for the same analyses described below. In this example, student-success holds might be given the value of 1 and administrative holds the value of 0.

## Descriptive Statistics

This guidance is based on using the Data Analysis Toolkit in Excel. Or you may use any other spreadsheet or analysis tool you are comfortable with.

## Hold-Level Descriptive Data

Use the master detail hold file for the following analyses. This is hold-level data, not student-level data. Be aware of this difference when drawing conclusions from the data.

### BASIC DEMOGRAPHIC INFORMATION

- ▶ Identify the sample size (n) and percentage for each demographic variable (do not count null values). There are many ways to do this; however, filters or pivot tables can be used to generate the counts and the percentages for each variable.
  - Consider NULL a valid value and retain/show it in your output

### HOLDS BY RESPONSIBILITY

Out of the total number of holds, calculate the following.

- ▶ Reg - the number and percentage of holds for which the Registrar's office is responsible.
- ▶ Bursar—the number and percentage of holds for which the Bursar's office is responsible.
- ▶ Fin Aid—the number and percentage of holds for which the Financial-Aid office is responsible.
- ▶ Other—the number and percentage of holds for which other offices are responsible.

### UNRESOLVED DEBT

- ▶ Filter the master detail hold file to those with DEBT = 1 and RESLVD = 0.
- ▶ Use the data-analysis tool in Excel to generate the descriptive statistics for the Amount field.
  - Total unresolved debt - Sum of the AMOUNT field
  - Average hold value
  - Minimum hold value

- Maximum hold value
- Standard deviation

## DEBT-RELATED HOLDS

- ▶ Number and percentage of holds resolved; use the master detail hold file.
- ▶ Filter data to those with DEBT = 1.
- ▶ Percentage resolved = Count of RESLVD/Total count of records with DEBT = 1.

## Student-Level Descriptive Data

Use the distinct-student-level data file for the following analyses. This is student-level data. Be aware of this difference when drawing conclusions from the data.

### INDIVIDUAL STUDENTS WITH UNRESOLVED-DEBT HOLDS

- ▶ Filter to DEBT = 1 and RESLVD = 0.
- ▶ Count unique values (Sort & Filter -> advanced -> unique records only)

### UNRESOLVED DEBT-HOLDS THAT PREVENT ACCESS TO A TRANSCRIPT BY DOLLAR-RANGE TABLE

- ▶ Beginning from the Distinct student-level-data file, filter the data to RESLVD = 0, TRANH =1 and filter out AMOUNT = "blank."
- ▶ Copy the AMOUNT field to a new worksheet.
- ▶ Use the full list of hold AMOUNTs to create a pivot table using each hold amount as a row label, the count of the AMOUNTs for each dollar amount and the sum of the AMOUNTs for each listed dollar AMOUNT of the holds.
- ▶ Fill out the table by summing the count of unresolved holds for each AMOUNT range (\$1 to < \$100, etc.).
  - Calculate the percentage for each AMOUNT range by dividing the count for each range by the total number of holds (calculated by summing the Count of Unresolved Holds)
  - For the Total Dollar Value of Holds, sum the AMOUNT of unresolved holds for each AMOUNT range, and add these ranges to compute the sum of the Total Dollar Value of Holds for all the AMOUNT ranges

### UNRESOLVED-DEBT HOLDS THAT PREVENT REGISTRATION BY DOLLAR-RANGE TABLE

- ▶ Beginning from the Distinct student-level-data file, filter the data to RESLVD = 0, REGH =1 and filter out AMOUNT = "blank."
- ▶ Copy the AMOUNT field to a new worksheet.
- ▶ Use the full list of hold AMOUNTs to create a pivot table using each hold amount as a row label, the

count of the AMOUNTs for each dollar amount and the sum of the AMOUNTs for each listed dollar AMOUNT of the holds.

- ▶ Fill out the table by summing the count of unresolved holds for each AMOUNT range (\$1 to < \$100, etc.).
  - Calculate the percentage for each AMOUNT range by dividing the count for each range by the total number of holds (calculated by summing the Count of Unresolved Holds)
  - For the Total Dollar Value of Holds, sum the AMOUNT of unresolved holds for each AMOUNT range, and add these ranges to compute the sum of the Total Dollar Value of Holds for all the AMOUNT ranges



**TIP: The analyses detailed in this Technical Guide and worksheet are focused on the holds status of students in totality over a single academic year. Depending on your institution's research questions and data availability, you may wish to perform additional or different analysis about all hold events that a student experiences (e.g., how many, timing of holds, and type of holds), and in more than one year.**

## Cross Tabulation

Cross tabulation is another way to examine this data. This technique can help you examine specific subgroups of the data, as well as the population overall.



**TIP: Items in No Holding Back resource center highlight how institutions used cross tabulation to review the parity and proportionality of holds usage rates of type of hold and across given student populations and to explore intersectional factors with holds usage.**

## IMPORTANT DISTINCTIONS FOR THESE DATA

- ▶ Students with holds – These are already captured in the data compiled for the main analyses.
- ▶ Students without holds –Add data for these additional students not covered in the demonstrated Regressions analysis, to the cross-tabs analysis. Institutions should compare students who had holds encompassed in the Master Detail Hold file (unique students/IDs) to the universe of students in the study timeframe (e.g., degree-/certificate-seeking undergraduate students who enrolled for credit). This will identify students who did not experience a hold. These students will be categorized as “No Hold” students, and their summary record will be added for the cross tabulations.



- ▶ Degree-/certificate-seeking undergraduate (or other)–Use the same method used for confirming students in the main holds analysis Master Detail Hold file as a “degree-/certificate-seeking undergraduate.”
- ▶ Enrolled for credit (degree-/certificate-seeking undergraduates)–Consider any student “enrolled for credit” if they enrolled for a total of 1.0 credit(s) or more in the study timeframe, regardless of whether they completed the credit(s). Do not include students who were enrolled for less than a 1.0 credit.

## CROSS-TABULATION OUTPUT

The No Holding Back pilot institutions performed cross tabulations for two key fields of interest–PELL and Race\_Ethnicity–in combination with the derived fields above, as demonstrated in the Technical Spreadsheet, in the tab “Detailed Crosstabs.” Institutions may wish to cross tabulate other key elements that relate to their environment.

1. The demonstrated cross tabulations are count data, or student n’s. From this, you could also compute row or column percentages and related statistics.
2. Small cell counts (e.g., 1-10) should be considered with caution; and depending on institution policy, may need to be suppressed.
  - a. Suppression of a count can be indicated by the value “S.”
  - b. Where there are no (zero) students occurring in a given cross-tab category/cell, the value of 0 (zero) is valid and should be used. By definition, “zero students” does not risk identifying a student and does not need to be suppressed.

## INTERPRETING CROSS TABULATIONS

Cross tabulations are a useful tool for disaggregating data and identifying potential relationships between variables, but alone do not necessarily identify statistical significance. Regressions

## Regressions

There are many different types of statistical analyses that could be run on the collected data. Each has its own strengths and weaknesses. For the sake of simplicity, we will focus on using logistic regression to examine the use and resolution of holds and ordinary least squares regression to examine hold amounts among students with an unresolved financial hold. You may choose to use a different approach, as long as the output is comparable to the listed regressions in how results may be interpreted. Use your software of choice for these analyses.



**TIP: Institutional capacity to perform and consume statistical analysis will vary. Items in *No Holding Back* [resource center](#) highlight a variety of approaches institutions can use to obtain evidence that is compelling for their setting.**

The variable RACE is the only nonbinary variable used in the analysis. RACE is a factor variable that requires all races to be compared to a baseline race. For this analysis, use white (5) as the baseline value. Once the analysis is complete, the odds ratio or relative effect based on race will be as compared to a white student.

## Logistic Regression

### RESOLUTION OF DEBT HOLDS BY STUDENT CHARACTERISTICS

Run a logistic regression with odds ratios using the master detail hold file where DEBT = 1.

Dependent variable: RESLVD

Independent variables: ENRSTD  
GENDER  
ETHNIC  
RACE  
AGE  
PELL  
COMP\*  
STOP\*  
TRANS\*

*\* If data is available.*

### RESOLUTION OF REGISTRATION HOLDS BY STUDENT CHARACTERISTICS

Run a logistic regression with odds ratios using the master detail hold file where REGH = 1.

Dependent variable: RESLVD

Independent variables: ENRSTD  
GENDER  
ETHNIC  
RACE  
AGE  
PELL  
COMP\*  
STOP\*  
TRANS\*

*\* If data is available.*

### RESOLUTION OF TRANSCRIPT HOLDS BY STUDENT CHARACTERISTICS

Run a logistic regression with odds ratios using the master detail hold file where TRANH = 1.

Dependent variable: RESLVD

Independent variables: ENRSTD  
GENDER

ETHNIC  
RACE  
AGE  
PELL  
COMP\*  
STOP\*  
TRANS\*  
*\* If data is available.*

## Ordinary Least Squares

Ordinary-least-squares regression can be used to explore relationships between the hold AMOUNT and student characteristics and hold types. Depending on the results of the two regressions below, your institution may want to examine the amount and student characteristics for unresolved debt specifically associated with each hold type.

### AMOUNT AND STUDENT CHARACTERISTICS

Run an ordinary-least-squares regression with DEBT = 1 using the master detail hold file.

Dependent variable: AMOUNT  
Independent variables: ENRSTD  
GENDER  
ETHNIC  
RACE  
AGE  
PELL  
COMP\*  
STOP\*  
TRANS\*  
*\* If data is available.*

### AMOUNT AND STUDENT CHARACTERISTICS FOR UNRESOLVED DEBT

Run an ordinary least squares regression with DEBT = 1 and RESLVD = 0 using the master detail hold file.

Dependent variable: AMOUNT  
Independent variables: ENRSTD  
GENDER  
ETHNIC  
RACE  
AGE  
PELL  
COMP\*  
STOP\*  
TRANS\*  
*\* If data is available.*

## Interpreting Results of the Statistical Analyses

It is important to review critically the results of any statistical analysis. There are many nuances or conditions that can influence the results of a statistical analysis. For this project, keep in mind the following.

- ▶ Results may show a relationship between variables. It is important to understand if the relationship is a correlation or if it is causal.
- ▶ Variables can act as a proxy for other information or variables.
- ▶ Your sample size should be large enough to be statistically significant.
- ▶ Institutional practices may unintentionally impact statistical results.

There are many resources available in print and on the internet on performing and interpreting statistical analyses.

### LOGISTIC REGRESSION

Logistic regressions model binary (1,0) data. In their raw form, results can be difficult to interpret, so these analyses focus on performing logistic regressions using odds ratios. An odds ratio reports the increase or decrease in the odds of an event occurring compared to a baseline value. When interpreting results from logistic regression, the coefficients report the difference from a base case. (This is the reason we use 5 as the baseline for the RACE variable.)

Three key statistics should be monitored when examining the logistic-regression output. They are the Psuedo R2 (McFadden's<sup>1</sup>) the Probability Chi2 and the P value associated with each coefficient. These three sets of parameters work together to describe the relationship between the variables.

The Psuedo R2 is an indicator of how much of the model output is described by the variables used. McFadden proposed a value of between 0.2 and 0.4 represented an excellent fit. The Probability Chi2 indicates whether the model is statistically significant. The P values indicate which variables are significant.

All three parameters must work together to provide a meaningful analysis. For example, if the P value for a coefficient shows a strong relationship between variables, but the Probability Chi2 shows the equation is not statistically significant or Psuedo R2 is very small, results are not meaningful.

Several other techniques to measure the goodness of fit exist. If you prefer a different technique, use it.

### ORDINARY LEAST SQUARES

Unlike the logistic regressions, the Ordinary Least squares analyses will provide the effect of each variable on the hold amount in terms of dollars.

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<sup>1</sup> There are several Psuedo R2s in statistical analysis. For details on McFadden's, consult your reference of choice.

Three key statistics should be monitored when examining the Ordinary least squares output. They are the Adjusted R2, the Probability>F and the P value associated with each coefficient. These three sets of parameters work together to describe the relationship between the variables.

The Adjusted R2 is an indicator of how much of the model output is described by the variables used. The Probability>F indicates if the model is statistically significant. The P values indicate which variables are significant.

All three parameters must work together to provide a meaningful analysis. For example, if the P value for a coefficient shows a strong relationship between variables, but the Probability>F shows the equation is not statistically significant or Adjusted R2 is very small, results are not meaningful.

## Optimizing the Models

Several techniques exist to optimize models and potentially improve results. The simplest is to remove the least statistically significant variables from your model one at a time then rerun the model to see if results improve. In the demonstrated example, do not remove any of the individual RACE categories because it may lead to meaningless results.

# APPENDIX A: DATA DICTIONARY

For the analysis demonstrated in this guide, the data files produced by the No Holding Back pilot institutions were limited to:

- ▶ Data from the academic year, or years, your institution selects to examine
- ▶ One line per student hold (not one line per student)
  - each line represents a specific hold
- ▶ Degree-seeking/certificate-seeking undergraduate students
- ▶ Full-time and part-time students
- ▶ Excludes dual-enrollment high-school students
- ▶ New and returning students

These were the data elements prepared for the demonstrated analysis. Many follow IPEDS demographic data categories/definitions except race and ethnicity. See below.

ITEM	NAME	DESCRIPTION	EXPECTED FORMAT
STUID	Student ID	Student Identification number. Generate a unique student ID number for each student. Do not to share sensitive data outside your institution. If deidentified ID numbers are generated, maintain a crosswalk between the deidentified ID and those in your institution's student information system.	Alphanumeric
ENRSTD	Student enrollment type	Fall enrollment type of the reported student for the year of hold. In the case in which a fall record does not exist for the student, use spring or summer, as appropriate. Part-time = 0 Full-time = 1	numeric
GENDER	Gender	Student's reported gender (IPEDS categories) Male = 0 Female = 1 Unknown or other = null	numeric
1 - Institutions for which data do not support the separate categorization of race and ethnicity may follow the IPEDS reporting schema and insert the resulting value in the RACE field, using a distinct code value for Hispanic that is not already assigned (e.g., 0 or 9).			
ETHNIC	Ethnicity	Does the student identify as Hispanic? (IPEDS categories) Non-hispanic = 0 Hispanic value = 1 Unknown = 8	numeric

ITEM	NAME	DESCRIPTION	EXPECTED FORMAT
RACE	Race	<p>Student's reported race. If ETHNIC=1, keep the reported race. Foreign/non resident should supersede other race codes. Recode unknown students (excluding foreign/non-resident) to Unknown = 8</p> <p>American Indian or Alaska Native value = 1</p> <p>Asian value = 2</p> <p>Black or African American value = 3</p> <p>Native Hawaiian or Other Pacific Islander value = 4</p> <p>White value = 5</p> <p>Two or more races value = 6</p> <p>Foreign/non resident value = 7</p> <p>Unknown (coded as unknown, not null) = 8</p> <p>[Optional, see above] Hispanic = 0 or 9</p>	numeric
AGE	Age category	<p>Student's age at time hold was placed</p> <p>Under 24 = 0</p> <p>24 or older = 1</p>	numeric
PELL	Pell eligibility	<p>Was the student Pell eligible at any point during the academic year? (Did the student receive Pell Grant(s) at any time during the academic year?)</p> <p>Yes = 1</p> <p>No = 0</p> <p>Unknown = null</p>	numeric
DEBT	Debt hold	<p>The hold is related to a debt</p> <p>YES = 1</p> <p>NO = 0</p>	numeric
AMOUNT	Dollar amount of debt hold	<p>Dollar amount of debt associated with a debt hold (DEBT); round to nearest dollar (no decimals); NO dollar sign; NO comma. If DEBT =0, this field should be NULL, NOT 0.</p>	numeric
REGH	Registration hold	<p>Does the hold recorded for this student prevent registration?(REGH and TRANH can be "Yes" if a single hold does both.)</p> <p>YES = 1</p> <p>NO = 0</p>	numeric
TRANH	Transcript hold	<p>Does the hold prevent a student from accessing an official transcript?(REGH and TRANH can be Yes if a single hold does both)</p> <p>YES = 1</p> <p>NO = 0</p>	numeric

ITEM	NAME	DESCRIPTION	EXPECTED FORMAT
BOTH	Registration and Transcript hold	Does the hold prevent a student from accessing an official transcript AND prevent registration? YES = 1 (Both REGH and TRANH should be 1) NO = 0	numeric
RESLVD	Hold resolved	Has the hold been resolved? (hold was ended, NOT overridden. Did the hold expire or was it removed because the student met the criteria for the institution to remove or expire the hold within the academic year?) YES = 1 NO = 0 This field cannot be NULL	numeric
COMP	Completer	Has the student completed the educational credential for which he/she was enrolled? ("Yes" is valid if completion was confirmed, preferably within the academic year.) YES = 1 NO = 0 If unknown = NULL	numeric
STOP	Stop out	Student should have enrolled in next fall term but failed to do so Student did not complete the credential for which he/she was enrolled AND did not transfer.) YES = 1 NO = 0 If unknown = NULL	numeric
TRANS	Transferred	Student is known to have transferred without graduating. ('Yes' is valid if transfer was confirmed, null if unknown and "No" if the institution is certain the student did not transfer.) YES = 1 NO = 0 Null = unknown	numeric
REGIST	Registrar's office hold	Source of the hold is the Registrar's office (Registrar's office own(s)/ed) the hold, originated/authorized the hold-policy use or necessity.) "Source" does not mean the entity or location of the staff that enacted the hold on the record. YES = 1 NO = 0	numeric



ITEM	NAME	DESCRIPTION	EXPECTED FORMAT
FINAID	Financial-aid office hold	Source of the hold is the Financialaid office (Financial- aid own(s/ed) the hold, originated/authorized the hold policy use or necessity.) "Source" does not mean the entity or location of the staff who enacted the hold on the record. YES = 1 NO = 0	numeric
BURS	Bursar's office hold	Source of the hold is the Bursar's office (Bursar's office own(s/ed) the hold, originated/authorized the hold policy use or necessity.) "Source" does not mean the entity or location of the staff who enacted the hold on the record. YES = 1 NO = 0	numeric
OTHER	Other source of hold	Source of hold is something other than REGIST, FINAID, BURS YES = 1 NO = 0	numeric
CODE	Hold code	The hold code from your SIS.	alphanumeric

# APPENDIX B: BANNER DATA MAPPING

## INSTITUTIONAL EXAMPLES

### Banner Institution #1

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	Banner	STUDENT_SUPER_L	STUDENT_MPIDM	This is a warehousing table containing a freeze of the STUDENT section of state SCARF reporting data with some additional useful values saved per student.
ENRSTD	Banner	STUDENT_SUPER_L	STUDENT_SCARF_HRS	This is a warehousing table containing a freeze of the STUDENT section of state SCARF reporting data with some additional useful values saved per student.
GENDER	Banner	STUDENT_SUPER_L	STUDENT_SEX	This is a warehousing table containing a freeze of the STUDENT section of state SCARF reporting data with some additional useful values saved per student.
ETHNIC	Banner	STUDENT_SUPER_L	RACE_ETHNIC_IPEDS_DESC	
RACE	Banner	STUDENT_SUPER_L	RACE_ETHNIC_IPEDS_DESC	
AGE	Banner	STUDENT_SUPER_L	STUDENT_DOB	Calculated from date-of-birth
PELL	Banner	STUDENT_SUPER_L	LOW_INCOME	
DEBT	Banner	SPRHLDD	SPRHOLD_HLDD_CODE	Banner Database Table Containing Hold Information
AMOUNT	Banner	SPRHLDD	SPRHOLD_AMOUNT_OWED	
REGH	Banner	STVHLDD	STVHLDD_REG_HOLD_IND	Validation table on HLDD hold codes
TRANH	Banner	STVHLDD	STVHLDD_TRANS_HOLD_IND	Validation table on HLDD hold codes
BOTH	Banner	STVHLDD	STVHLDD_REG_HOLD_IND, STVHLDD_TRANS_HOLD_IND	
RESLVD	Banner	SPRHLDD	SPRHOLD_TO_DATE	

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
COMP	Banner	DEGREE_L	DEGREE_MPIDM	DEGREE_L is a warehousing table containing freezes of DEGREE completion data sent in State reporting
STOP	Banner	STUDENT_SUPER_4WK_L	STUDENT_MPIDM, STUDENT_TERM	STUDENT_SUPER_4WK_L is, like STUDENT_SUPER_L a freeze of state-reported data, plus assorted useful fields; however this table holds freezes from our 4th-week census rather than end-of-term
TRANS	Banner	NSC_COMP_AND_NON_PERS	REQUESTER_RETURN_FIELD	NSC_COMP_AND_NON_PERS contains data from the National Student Clearinghouse on EOU students found attending elsewhere
REGIST	Banner	STVHLDD	SPRHOLD_HLDD_CODE	
FINAID	Banner	STVHLDD	SPRHOLD_HLDD_CODE	
BURS	Banner	STVHLDD	SPRHOLD_HLDD_CODE	
OTHER	Banner	STVHLDD	SPRHOLD_HLDD_CODE	
CODE	Banner	STVHLDD	SPRHOLD_HLDD_CODE	

## Banner Institution #2

Cognos is our data warehouse where reports and queries are created. Although Cognos was used for this project the Banner mappings have been included where available.

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	Banner	SPRIDEN	SPRIDEN_ID	
ENRSTD	Banner	SFRSTCR	SFRSTCR_CREDIT_HR SFRSTCR_TERM_CODE	The credit hour field is used in combination with a student's level (undergrad, grad, etc) to determine if they were enrolled full or part-time using our state SCARF system.
GENDER	Banner	SPBPERS	SPBPERS_SEX	Students who are Non-Binary are coded as null

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
ETHNIC	Banner	SPBPERS	SPBPERS_ETHN_CDE	
RACE	Banner	SPBPERS GORPRAC	SPBPERS_ETHN_CDE GORPRAC_RACE_CDE	Coding for WICHE is slightly different than our internal versions. In order to account for race for students who are Hispanic/Latino all race/ethnicity indicators were used in our calculation.
AGE	Banner	SPBPERS SPRHOLD	SPBPERS_BIRTH_DATE SPRHOLD_TO_DATE	Calculated age at time of hold using student's birth date and hold from date
PELL	Banner	RPRATRM	RPRATRM_FUND_CODE RPRATRM_OFFER_AMT RPRATRM_ACCEPT_AMT	Calculated based on student receiving an award from the Pell fund during aid year 2021-22, where student accepted award and award amount was over \$0.
DEBT	Banner	SPRHOLD AUDIT_SPRHOLD	SPRHOLD_HLDD_CODE OLD_SPRHOLD_HLDD_CODE	Calculated using logic based on which hold types are associated with a student account balance.
AMOUNT	Banner	TBRACCD	TBRACCD_AMOUNT TBRACCD_ENTRY_DATE TBRACCD_TERM_CODE	Calculated as a sum of charges/ payments using the student account table for all transactions that occurred prior to or on the hold date, that were applied for terms prior to or matching the hold term.
REGH	Banner	STVHLDD	STVHLDD_REG_HOLD_IND	
TRANH	Banner	STVHLDD	STVHLDD_TRANS_HOLD_IND	
BOTH	Banner	Calculated - See Notes STVHLDD	STVHLDD_REG_HOLD_IND STVHLDD_TRANS_HOLD_IND	Manually calculated using registration and transcript hold indicators.
RESLVD	Banner	SPRHOLD AUDIT_SPRHOLD	SPRHOLD_TO_DATE OLD_SPRHOLD_TO_DATE ACTIVITY_DATE	Resolved IND was calculated. If the hold was not deleted this was determined using the hold to date in the Holds table. For holds that were deleted this was calculated manually using a holds audit table in Banner. We re-constructed when the hold was deleted and presumed resolved.

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
COMP	Banner	SHRDGMR	SHRDGMR_DEGS_CODE SHRDGMR_TERM_CODE_GRAD	Calculated using degree status and graduating term, looking at bachelors degrees only.
STOP	Banner	Calculated - See Notes SFRSTCR SHRDGMR	Enrollment: SFRSTCR_CREDIT_HR SFRSTCR_TERM_CODE  Degrees: SHRDGMR_DEGS_CODE SHRDGMR_TERM_CODE_GRAD	Calculated using degrees and Fall term enrollment; if student did not complete degree, was not enrolled in Fall term 2022, and did not transfer out then they were coded as stopped out.
TRANS	NSC	Calculated - See Notes Cognos Table	Cognos: [ENROLL_BEGIN_DATE] [ENROLL_END_DATE] [PSU_TERM]	Calculated using a National Student Clearinghouse (NSC) table within our reporting warehouse Cognos. Student needed to have attended another institution after their most recent enrolled term during AY2021-22.
REGIST	Banner	SPRHOLD AUDIT_SPRHOLD	SPRHOLD_HLDD_CODE OLD_SPRHOLD_HLDD_CODE SPRHOLD_ORIG_CODE	Calculated using logic based on which hold types are associated with which offices using the SPRHOLD_ORIG_CODE for context.
FINAID	Banner	SPRHOLD AUDIT_SPRHOLD	SPRHOLD_HLDD_CODE OLD_SPRHOLD_HLDD_CODE SPRHOLD_ORIG_CODE	Calculated using logic based on which hold types are associated with which offices using the SPRHOLD_ORIG_CODE for context.
BURS	Banner	SPRHOLD AUDIT_SPRHOLD	SPRHOLD_HLDD_CODE OLD_SPRHOLD_HLDD_CODE SPRHOLD_ORIG_CODE	Calculated using logic based on which hold types are associated with which offices using the SPRHOLD_ORIG_CODE for context.
OTHER	Banner	SPRHOLD AUDIT_SPRHOLD	SPRHOLD_HLDD_CODE OLD_SPRHOLD_HLDD_CODE SPRHOLD_ORIG_CODE	Calculated using logic based on which hold types are associated with which offices using the SPRHOLD_ORIG_CODE for context.
CODE	Banner	SPRHOLD AUDIT_SPRHOLD	SPRHOLD_HLDD_CODE OLD_SPRHOLD_HLDD_CODE	

## Banner Institution #3

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	Banner	spriden	spriden_id	where spriden_change_ind is null
ENRSTD	Banner	sfrstcr		choose relevant term codes, sfrstcr_rsts_codes, potentially sum of sfrstcr_credit_hr > 0
GENDER	Banner	spbpers	spbpers_sex	
ETHNIC	Banner	spbpers	spbpers_ethn_code	
RACE	Banner	gorprac, stvethn, spbpers		
AGE	Banner	spbpers, stvterm	spbpers_birth_date, stvterm_start_date	calculated compared to start of fall term in study; use Banner function made by Ellucian: F_CALCULATE_AGE(STVTERM_START_DATE,SPBPERS_BIRTH_DATE,SPBPERS_DEAD_DATE) AS AGE
PELL	Banner	rprawrd	rprawrd_fund_code	use fund code for PELL, where offered amount > 0
DEBT	metadata about holds; not in Banner			debt-related hold codes were identified by asst controller
AMOUNT	Banner	tbraccd	sum of charges - sum of payments where transaction date <= date hold was placed.	see PL/SQL file submitted to study
REGH	Banner	stvhldd	stvhldd_reg_hold_ind	stvhldd_reg_hold_ind = 'Y'
TRANH	Banner	stvhldd	stvhldd_trans_hold_ind	stvhldd_trans_hold_ind = 'Y'
BOTH	Banner	stvhldd		both reg_hold_ind and trans_hold_ind = 'Y'
RESLVD	Banner	sprhold	sprhold_to_date	sprhold_to_date is null or < sysdate
COMP	Banner	shrdgmr		look for degree conferral info for relevant program of study

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STOP	Banner	sfrstcr		any student previously enrolled who is later not enrolled (within study term parameters)
TRANS	not available			we do not have data about students who have transferred away; we simply know they are not at our institution
REGIST	metadata about holds; not in Banner			This identification of who is "responsible" for the hold is stored outside of Banner.
FINAID	metadata about holds; not in Banner			This identification of who is "responsible" for the hold is stored outside of Banner.
BURS	metadata about holds; not in Banner			This identification of who is "responsible" for the hold is stored outside of Banner.
OTHER	metadata about holds; not in Banner			This identification of who is "responsible" for the hold is stored outside of Banner.
CODE	Banner	stvhldd	stvhldd_code	

# APPENDIX C: ORACLE DATA MAPPING INSTITUTIONAL EXAMPLES

## Oracle Institution #1

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	PeopleSoft 9.2	STUD_ENRL	EMPLID	
ENRSTD	PeopleSoft 9.2	STUD_ENRL	UNT_PRGRSS_FA	
GENDER	PeopleSoft 9.2	SCC_PERDATA_QVW	SEX	
ETHNIC	PeopleSoft 9.2	SCC_DIV_ETH_QVW	ETHIC_GPP_CD	
RACE	PeopleSoft 9.2	SCC_DIV_ETH_QVW	ETHIC_GPP_CD	
AGE	PeopleSoft 9.2	SCC_PERDATA_QVW	BIRTHDATE	
PELL	PeopleSoft 9.2	STDNT_AWARDS	ITEM_TYPE	
DEBT	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
AMOUNT	PeopleSoft 9.2	ACCOUNT_TOT_VW	ACCOUNT_BALANCE	
REGH	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
TRANH	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
BOTH	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
RESLVD	PeopleSoft 9.2			
COMP	PeopleSoft 9.2	ACAD_DEGR	DEGREE	
STOP	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
TRANS	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
REGIST	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
FINAID	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
BURS	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
OTHER	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
CODE	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	



## Oracle Institution #2

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	PeopleSoft Campus Solutions 9.2	PS_F_STDNT_ACAD_PROG_PLAN	EMPLID	
ENRSTD	PeopleSoft Campus Solutions 9.2	PS_D_STDNT_CAREER	ENROLLED_FLAG	
GENDER	PeopleSoft Campus Solutions 9.2	"XX"_D_PERSON	GENDER_CD	
ETHNIC	PeopleSoft Campus Solutions 9.2	"XX"_D_PERSON	IPEDS_RACE_ETHNICITY	
RACE	PeopleSoft Campus Solutions 9.2	"XX"_D_PERSON	IPEDS_RACE_ETHNICITY	
AGE	PeopleSoft Campus Solutions 9.2	"XX"_D_PERSON	AGE	
PELL	PeopleSoft Campus Solutions 9.2	PS_D_STDNT_CAREER	PELL_RECIPIENT_FLAG	
DEBT	PeopleSoft Campus Solutions 9.2	custom table	AMOUNT_AT_CREATE	if AMOUNT_AT_CREATE > 0 then 1
AMOUNT	PeopleSoft Campus Solutions 9.2	custom table	AMOUNT_AT_CREATE	
REGH	PeopleSoft Campus Solutions 9.2	custom table	CASE WHEN SERVICE_IMPACT IN ('AENR','CENR') THEN 1 ELSE 0 END AS REGH	
TRANH	PeopleSoft Campus Solutions 9.2	custom table	CASE WHEN SERVICE_IMPACT IN ('TRAN','NOTRN') THEN 1 ELSE 0 END AS TRANH	
BOTH	PeopleSoft Campus Solutions 9.2	custom table		when REGH    TRANH = '11' THEN 1
RESLVD	PeopleSoft Campus Solutions 9.2	custom table	CASE WHEN b.EFFECTIVE_END_DATE IS NULL THEN NULL ELSE CASE WHEN b.EFFECTIVE_END_DATE <= '12-MAY-2022' THEN 1 ELSE 0 END END AS RESLVD	

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
COMP	PeopleSoft Campus Solutions 9.2	PS_F_DEGREES		row present matching on degree type
STOP	PeopleSoft Campus Solutions 9.2	PS_F_STDNT_ACAD_PROG_PLAN		no row present on Fall 2022 enrollment
TRANS	PeopleSoft Campus Solutions 9.2	custom NSC table		row present showing transfer before Fall 2022
REGIST	PeopleSoft Campus Solutions 9.2	custom table		hold code begins with "R%"
FINAID	PeopleSoft Campus Solutions 9.2	custom table		hard coded to '0' for all rows, no FINAID meeting eligibility requirements to be included in the dataset
BURS	PeopleSoft Campus Solutions 9.2	custom table		hold code begins with "B%"
OTHER	PeopleSoft Campus Solutions 9.2	custom table		all other items
CODE	PeopleSoft Campus Solutions 9.2	custom table	b.SRVC_IND_CD  '['  SRVC_IND_REASON  ']'	

### Oracle Institution #3

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	PeopleSoft Campus Solutions 9.2	STDNT_ENRL	EMPLID	
ENRSTD	PeopleSoft Campus Solutions 9.2	STDNT_CAR_TERM	ACADEMIC_LOAD	
GENDER	PeopleSoft Campus Solutions 9.2	PERS_DATA_EFFDT	SEX	
ETHNIC	PeopleSoft Campus Solutions 9.2	ETHNICITY_DTL	ETHNIC_GRP_CD	

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
RACE	PeopleSoft Campus Solutions 9.2	ETHNICITY_DTL	ETHNIC_GRP_CD	Peoplesoft stores the granular data for this field; however the derived values are calculated and stored in our data warehouse (from where these data were pulled).
AGE	PeopleSoft Campus Solutions 9.2	PERSON	BIRTHDATE	
PELL	PeopleSoft Campus Solutions 9.2	STDNT_AWARDS	DISBURSED_AMOUNT	Using STDNT_AWARDS and checking for DISBURSED_AMOUNT greater than 0 for Pell item types, we can determine which students received a Pell award during a set period of time. ISIR_CONTROL has a field called PELL_ELIGIBILITY (where value = Y) that can indicate if a student is eligible for Pell, but there are other factors that ultimately determine whether or not the student can receive Pell (e.g., verification completed, isir comment codes cleared, lifetime eligibility, SAP, etc).
DEBT	PeopleSoft Campus Solutions 9.2	SRVC_IND_CD_TBL	SRVC_IND_CD	
AMOUNT	PeopleSoft Campus Solutions 9.2	ACCOUNT_TOT_VW	ACCOUNT_BALANCE	
REGH	PeopleSoft Campus Solutions 9.2	SERVICE_IMPACT	SERVICE_IMPACT	
TRANH	PeopleSoft Campus Solutions 9.2	SERVICE_IMPACT	SERVICE_IMPACT	
BOTH	PeopleSoft Campus Solutions 9.2	SERVICE_IMPACT	SERVICE_IMPACT	

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
RESLVD	PeopleSoft Campus Solutions 9.2	SRVC_IND_DATA	SRVC_IND_CD	Resolved holds would no longer be associated with the student emplid in this table.
COMP	PeopleSoft Campus Solutions 9.2	ACAD_PROG	PROG_STATUS	
STOP	PeopleSoft Campus Solutions 9.2	STDNT_ENRL	EMPLID	Would see if emplid exists in STDNT_ENRL for next term to infer stopout.
TRANS	PeopleSoft Campus Solutions 9.2	n/a	n/a	From Clearinghouse data
REGIST	PeopleSoft Campus Solutions 9.2	SRVC_IND_CD_TBL	DESCR	
FINAID	PeopleSoft Campus Solutions 9.2	SRVC_IND_CD_TBL	DESCR	
BURS	PeopleSoft Campus Solutions 9.2	SRVC_IND_CD_TBL	DESCR	
OTHER	PeopleSoft Campus Solutions 9.2	SRVC_IND_CD_TBL	DESCR	
CODE	PeopleSoft Campus Solutions 9.2	SRVC_IND_CD_TBL	SRVC_IND_CD	

# APPENDIX D: COLLEAGUE DATA MAPPING INSTITUTIONAL EXAMPLE

## Colleague Institution

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	Colleague	All used (Frozen Enrollment, restrictions, credentials, financial aid, movement)	PersonId/various	Linking global id
ENRSTD	Colleague	Frozen Enrollment	FULLTIME_PARTTIME	
GENDER	Colleague	Frozen Enrollment	GENDER	
ETHNIC	Colleague	Frozen Enrollment	ETHNIC	
RACE	Colleague	Frozen Enrollment	RACE1 through RACE5	
AGE	Calculated	Frozen Enrollment & Restrictions	BIRTH_DATE, STR_START_DATE	
PELL	Calculated	Term Awards	AWARD_CATEGORY_ID	Any pell in the year
DEBT	Defined by Code	Based on Registrar's Excel file	CODE	
AMOUNT	Calculated	Restriction, saved Excel files	STR_COMMENTS, various	Saved Excel data used over comment data
REGH	Defined by Code	Based on Registrar's Excel file	CODE	
TRANH	Defined by Code	Based on Registrar's Excel file	CODE	
BOTH	Defined by Code	Based on Registrar's Excel file	CODE	
RESLVD	Calculated	Whether or not end date has passed	STR_END_DATE	
COMP	Calculated	Credentials	ACAD_DEGREE	
STOP	Calculated	Whether or not a student did anything	ACAD_DEGREE, STC_COURSE_NAME, MovementTerm	
TRANS	Calculated	StudentMovement	MovementTerm	
REGIST	Defined by Code	Based on Registrar's Excel file	CODE	
FINAID	Defined by Code	Based on Registrar's Excel file	CODE	

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
BURS	Defined by Code	Based on Registrar's Excel file	CODE	
OTHER	Defined by Code	Based on Registrar's Excel file	CODE	
CODE	Colleague	Restriction	CODE	

# APPENDIX E: CAMS ENTERPRISE DATA MAPPING INSTITUTIONAL EXAMPLE

## CAMS Institution

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
STUID	CAMS Enterprise	SRAcademic; StudentProgram; StudentStatus; CAMS_StudentLedger_View; etc.	StudentUID	Pervasive use
ENRSTD	IIRT - IR	vw_StudentTermEnrollmentDetail	Credits	Sum over term credits; field = 1 if sum >= 12, 0 else
GENDER	IIRT - IR	vw_StudentDemographics	Gender	Each student assigned an M/F gender even if non-binary...
ETHNIC	IIRT - IR	vw_StudentDemographics	isHispanic	
RACE	IIRT - IR	vw_StudentDemographics	Race	
AGE	IIRT - IR	vw_StudentDemographics	BirthDate	Age calculated from either hold date or date at start of student's first term for those with no holds
PELL	Powerfaids (pfaids)	stu_award	amount	sum(amount) over `fund_name = 'PELL'` for in-scope terms; student recieved Pell money
DEBT	CAMS Enterprise	StudentHolds	holdCategoryID	ID in (3,8,10,15,19,27,28, 36) - verified debt holds with Business Services
AMOUNT	CAMS Enterprise	CAMS_StudentLedger_View	ShowAmount	Some subtlety because of mistakes, but essentially sum ShowAmount before hold date to determine hold amount
REGH	CAMS Enterprise	StudentHolds; FacultyPortalStopReg	StopOnLineRegistration	
TRANH	CAMS Enterprise	StudentHolds; FacultyPortalStopReg	StopTranscript	
BOTH	CAMS Enterprise	StudentHolds; FacultyPortalStopReg	StopOnLineRegistration; StopTranscript	

FIELD	SYSTEM	TABLE/VIEW NAME	DATA ELEMENT NAME	REMARKS
RESLVD	CAMS Enterprise	StudentHolds; FacultyPortalStopReg	VoidDate; updateTime	VoidDate <= 2022-05-12
COMP	IIRT - IR	vw_StudentDegreesAwarded	Term	1 if awarded a degree in term >= F21, 0 else
STOP	IIRT - IR, IT; CAMS Enterprise	CAMS SRAcademic	TermCalendarID; Credits	If student didn't complete, didn't transfer, and did not persist into FA22 then 1, else 0
TRANS	IIRT - IT	tmp_nsc_se_20220126	Enrollment Begin	if enrolled in another college after F21 then 1, else 0. Temporary SQL table from created from ClearingHouse Data
REGIST	CAMS Enterprise	StudentHolds	holdCategoryID	Determined holdCategoryIDs which belong to Registrar
FINAID	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
BURS	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
OTHER	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	
CODE	PeopleSoft 9.2	SRVC_IND_DATA	SRCV_IND_CD	





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