Statewide Demographic Data at Your Fingertips: How to Use the CCCCO DataMart

EEO Workshop: Using Data to Build a Diverse Faculty September 2018

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Data Mart

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Outline

Breakout Session A: Statewide Demographic Data at Your Fingertips: How to Use the CCCCO DataMart

- Exercise 1: Demo of Datamart and Excel
  - Employee Data: Faculty & Staff Demographics Report
  - Student Data: Annual/Term Student Count Report
  - Cleaning the Data & Pivot Table
  - Significantly Underrepresented Group Analysis
- Exercise 2: Hands-on Activity using Datamart
- EEOC Adverse Impact Test (4/5 Rule)

Intro: EEO Longitudinal Data

- The EEO Longitudinal Data Guide was released in April of 2018
- The Chancellor's Office and the Statewide EEO and Diversity Advisory Committee developed a guide for the use of local EEO data
  - What is Longitudinal Data & Title 5 EEO Longitudinal Data Requirements?
  - Why Should I Collect and Analyze Longitudinal Data?
  - How Do I Use Longitudinal Data?
  - Examples and Best Practices

What is Longitudinal Data?

- A dataset is longitudinal if it tracks the same type of information over a period of time
- Advantage of longitudinal databases: they can identify patterns and measure change

Longitudinal Data in EEO Programs

- An analysis of district recruitment, hiring, retention and promotion data over a period of years may help identify when non job-related factors result in the significant underrepresentation of a monitored group
- Helps ensure district policies and procedures do not have an adverse impact on a protected class of individuals
- May also demonstrate the impact of changes in local policies on the phases of the employment process

Why Should I Collect and Analyze Longitudinal Data?

- The purpose of our EEO programs is to ensure that all qualified individuals have a full and fair opportunity to compete for hiring and promotion and to enjoy the benefits of district employment
- EEO should include identifying and eliminating barriers to employment that are not job related
- Data analysis is a powerful tool that allows districts to measure the impact of local hiring practices on specific monitored groups over a period of years

Title 5 EEO Longitudinal Data Requirements

Each District EEO Plan must include:

"A process for gathering information and periodic, **longitudinal analysis of the district's employees and applicants**, broken down by [monitored group status and job categories], to determine whether additional measures are required…and to implement and evaluate the effectiveness of those measures"

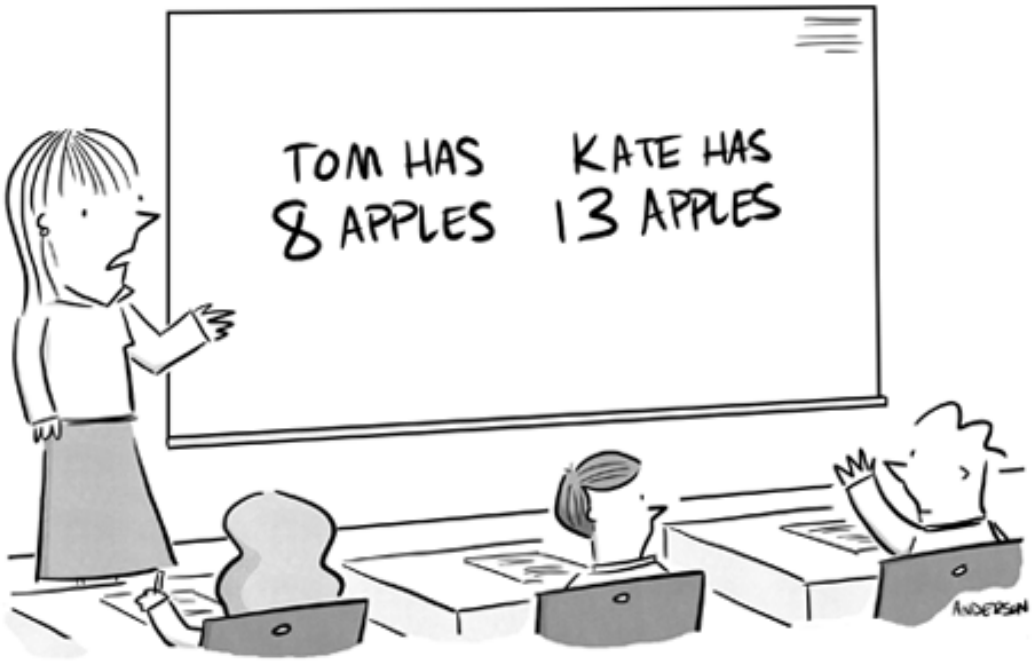
- Title 5, section 53003

Title 5 EEO Longitudinal Data Requirements

- Each district is required to review the longitudinal information gathered about the district's employees and applicants *"to determine if significant underrepresentation of a monitored group may be the result of non-job related factors in the employment process"*
- The phases of the employment process "include, but are not limited to recruitment, hiring, retention and promotion"

- Title 5, section 53006

How do I analyze the data & interpret the results?



"I don't know, maybe apples are on sale. Let's focus on the math."

- Significantly Underrepresented Group Analysis
- EEOC Adverse Impact Test (4/5 Rule)

Significantly Underrepresented Group Analysis (aka "The 80% Rule")

- Districts are required to identify any "significantly underrepresented groups"
- Significantly Underrepresented Group Defined:

  "any monitored group for which the percentage of persons from that group employed by the district in any job category…is below eighty percent (80%) of the projected representation for that group in the job category in question."

  -Title 5, section 53001(l)

80% Rule: Projected Representation

- Title 5 does not define "projected representation" for purposes of the 80 Percent Rule – it is a local decision
- Local districts have the discretion and authority to establish projected representation based on one or more factors, including:
  - student demographics at the college or district
  - community demographics in the district's service area
  - labor market availability for the job category
  - previous demographics of job applicants

Exercise 1: Demo of Datamart & Excel

Data Mart (1.0)

- Developed in 2001 by MIS
- Popular platform for stakeholders

Data Mart 2.0

- Continuous Development since 2009
- College submissions displayed next day
- Site - http://datamart.cccco.edu

datamart.cccco.edu

California Community Colleges Chancellor's Office

Management Information Systems Data Mart

Home | Resources | Queries

Click Here

Welcome to California Community Colleges Chancellor's Office MIS Data Mart

The data mart provides information about students, courses, student services, outcomes and faculty and staff. The emphasis of a data mart is to answer the questions of administrators, educators, parents, students, state leaders, and professional organizations.

Because the data mart is aimed at supplying information to a wide variety of users, the easy-to-use interface and query explanations insure the data are easily accessed and processed.

Begin by selecting one of the topic areas.

ABOUT CHANCELLOR'S OFFICE

The California Community Colleges is the largest postsecondary education system in the nation. The primary missions of the system are:

- Preparing students to transfer to four-year universities
- Workforce development and training
- Basic skills and remedial education

Established by legislation in 1967, the Chancellor's office is the administrative branch charged with providing leadership, advocacy, and support for the system.

The Chancellor's office operates under the direction of the state chancellor who is guided by the Board of Governors. The state chancellor is appointed by the board and board members are appointed by the Governor.

Other Educational Links

- Accountability Reporting (ARCC)
- CCCCO Research Reports
- Association for Institutional Research (AIR)
- California Association for Institutional Research (CAIR)
- The Research and Planning Group for CCC
- American Educational Research Association
- National Council on Measurement in Education
- National Center for Education Statistics
- Society for Colleges and University Planning
- Academic Senate for CCC
- Community College League of California
- California State University
- University of California President's Office (UCOP)

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Management Information Systems Data Mart

Home | Students | Courses | Student Services | Outcomes | Faculty & Staff

Students/Headcounts

Reports showing student counts, with demographic breakouts if desired, by:

- Annual/Term Student Count
- Enrollment Status
- Day/Evening Status
- Full-time/Part-time Status
- Citizenship Status
- Education Status
- Full-time Equivalent Student (FTES) Counts
- Distance Education (DE) Full-time Equivalent Student (FTES) Counts

Student Services

Reports showing student counts, with demographic breakouts if desired, for students who are participants in programs and or services overseen by the Student Services Division of the Chancellor's Office:

- Student Assessment Summary by Instrument ID
- California Work Opportunity and Responsibility to Kids (CalWORKs)
- Disabled Student Program and Services (DSPS)
- Extended Opportunity Program and Services (EOPS)
- Financial Aid
- Matriculation
- Special Population/Group Student Count
- Student Success Services Student Count

Outcomes

Reports showing student outcomes in enrollments and programs, with demographic breakouts if desired, by:

- Basic Skills Cohort Progress Tracker
- Enrollment Retention and Success Rate
- Grade Distribution
- Program Awards
- Student Success Scorecard Metrics
- Student Success Scorecard Skills Builder Metric
- Transfer Velocity
- System Wage Tracker
- College Wage Tracker
- Transfer Volume

Courses/Calendar

Various reports showing course characteristics such as TOP code, credit status, SAM code, etc. as well as how the course was offered such as day / evening status and accounting method. The reports include:

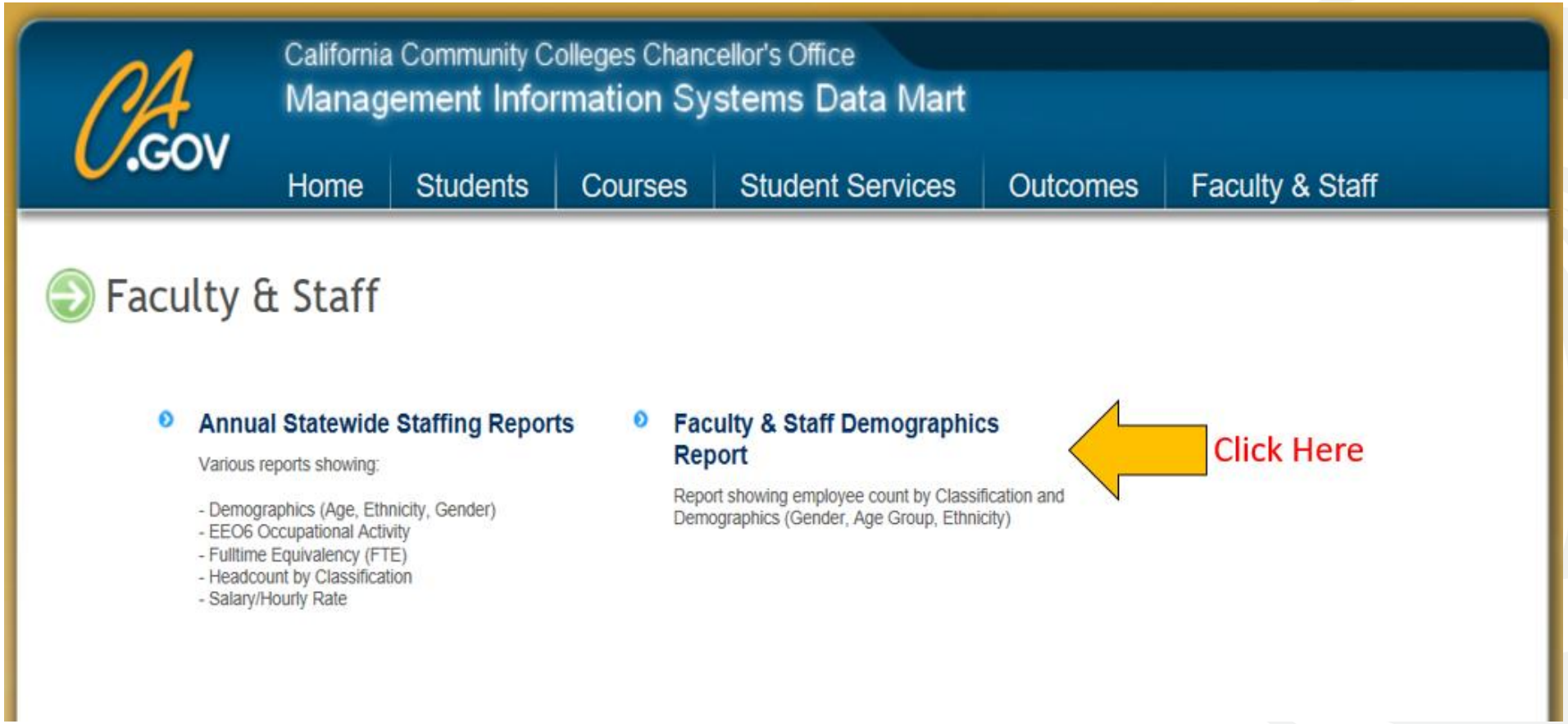
- Counts of sections offered, students enrolled, and FTES by credit course characteristics
- Counts of sections offered, students enrolled, and FTES by noncredit course characteristics
- Counts of sections offered, students enrolled, and FTES by basic skills course characteristics
- List of courses offered during a term with section counts and characteristics
- Academic Calendar Summary for all colleges for a fiscal year
- Academic Calendar for a district for a fiscal year
- College Master Course/Program File

Faculty & Staff

Reports showing faculty and staff:

- Annual Statewide Staffing Reports
- Faculty & Staff Demographics

Faculty & Staff Demographics



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Part 1: Employee Data

- Step 1: Go to this site: https://datamart.cccco.edu/Faculty-Staff/Staff_Demo.aspx
- Step 2: Specify the District/College
- Step 3: Select the following Terms: **Fall 2013 to Fall 2017 inclusive**
- Step 4: Click on “View Report”

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Management Information Systems Data Mart

Home | Students | Courses | Student Services | Outcomes | Faculty & Staff

You are here : Data Mart > Faculty & Staff > Faculty & Staff Demographics

Faculty & Staff Demographics Report - Parameter Selection Area

Select State-District-College: Districtwide Search

Select District-College: Los Rios CCD

Select Term: Fall 2017 Employee;Fall 201

- Fall 2016 Employee
- Fall 2015 Employee
- Fall 2014 Employee
- Fall 2013 Employee

Close

View Report

Export To ->

Excel CSV Text

Records

Simple Layout Advanced Layout

Faculty & Staff Demographic a

Report Area

Faculty & Staff Demographics		
	Employee Count	Employee Count (%)
Grand Total		

Report Format Selection Area - Check field to include in the report

District Name | College Name (Primary Location) | Gender | Age Group | Ethnicity

Update Report

Notes & Links

* Data for the terms prior to Fall 2000 is not available.
* Primary location for a staff is the college where staff is assigned maximum number of hours.

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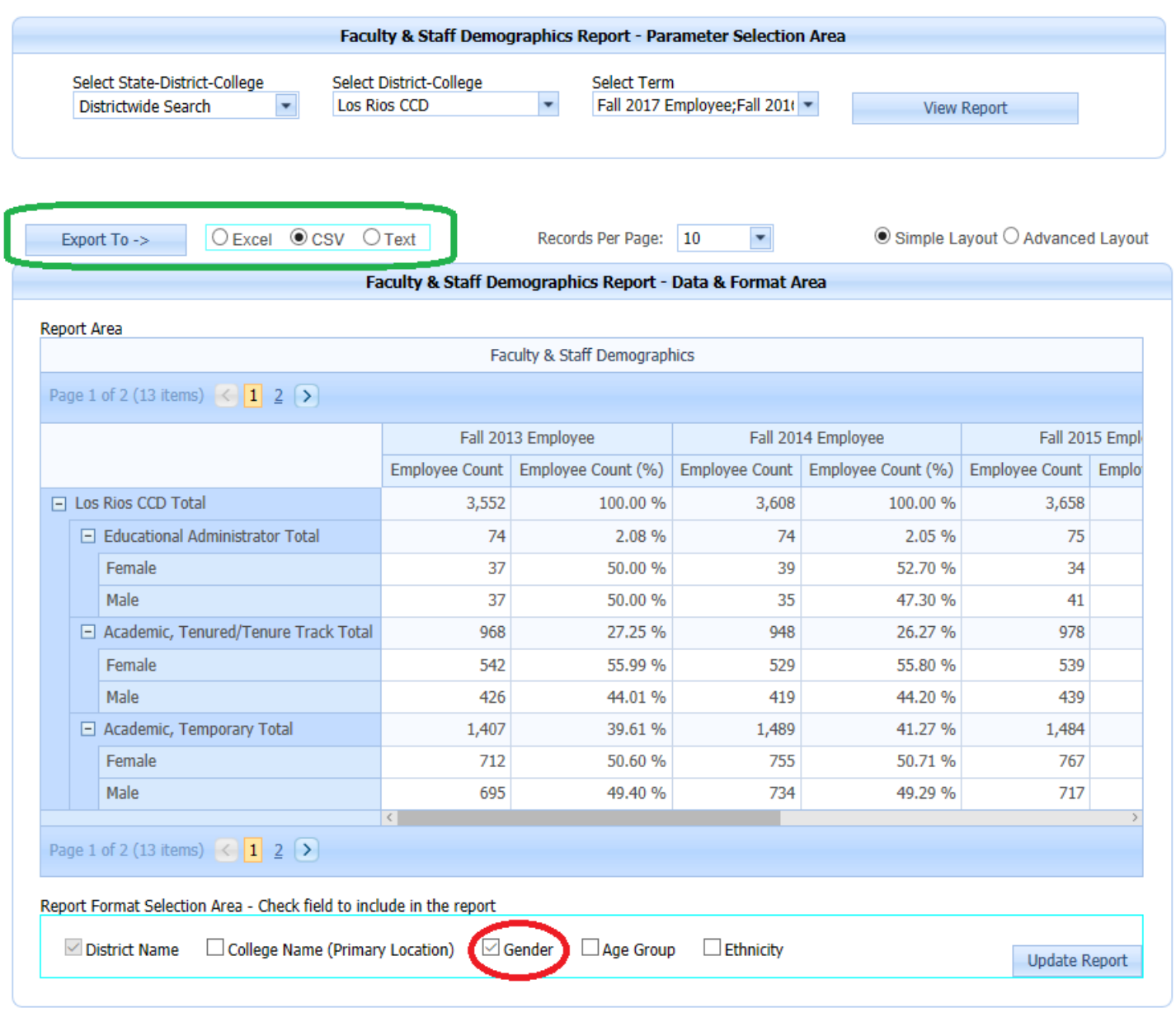
- Step 5: Select “Gender” at the bottom (see red oval)
- Step 6: Click on “Update Report” at the lower right corner
- Step 7: Export to CSV (see green oval)



	Fall 2013 Employee		Fall 2014 Employee		Fall 2015 Empl
	Employee Count	Employee Count (%)	Employee Count	Employee Count (%)	Employee Count	Emplo
Los Rios CCD Total	3,552	100.00 %	3,608	100.00 %	3,658	
Educational Administrator Total	74	2.08 %	74	2.05 %	75	
Female	37	50.00 %	39	52.70 %	34	
Male	37	50.00 %	35	47.30 %	41	
Academic, Tenured/Tenure Track Total	968	27.25 %	948	26.27 %	978	
Female	542	55.99 %	529	55.80 %	539	
Male	426	44.01 %	419	44.20 %	439	
Academic, Temporary Total	1,407	39.61 %	1,489	41.27 %	1,484	
Female	712	50.60 %	755	50.71 %	767	
Male	695	49.40 %	734	49.29 %	717	

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Part 2: Student Data

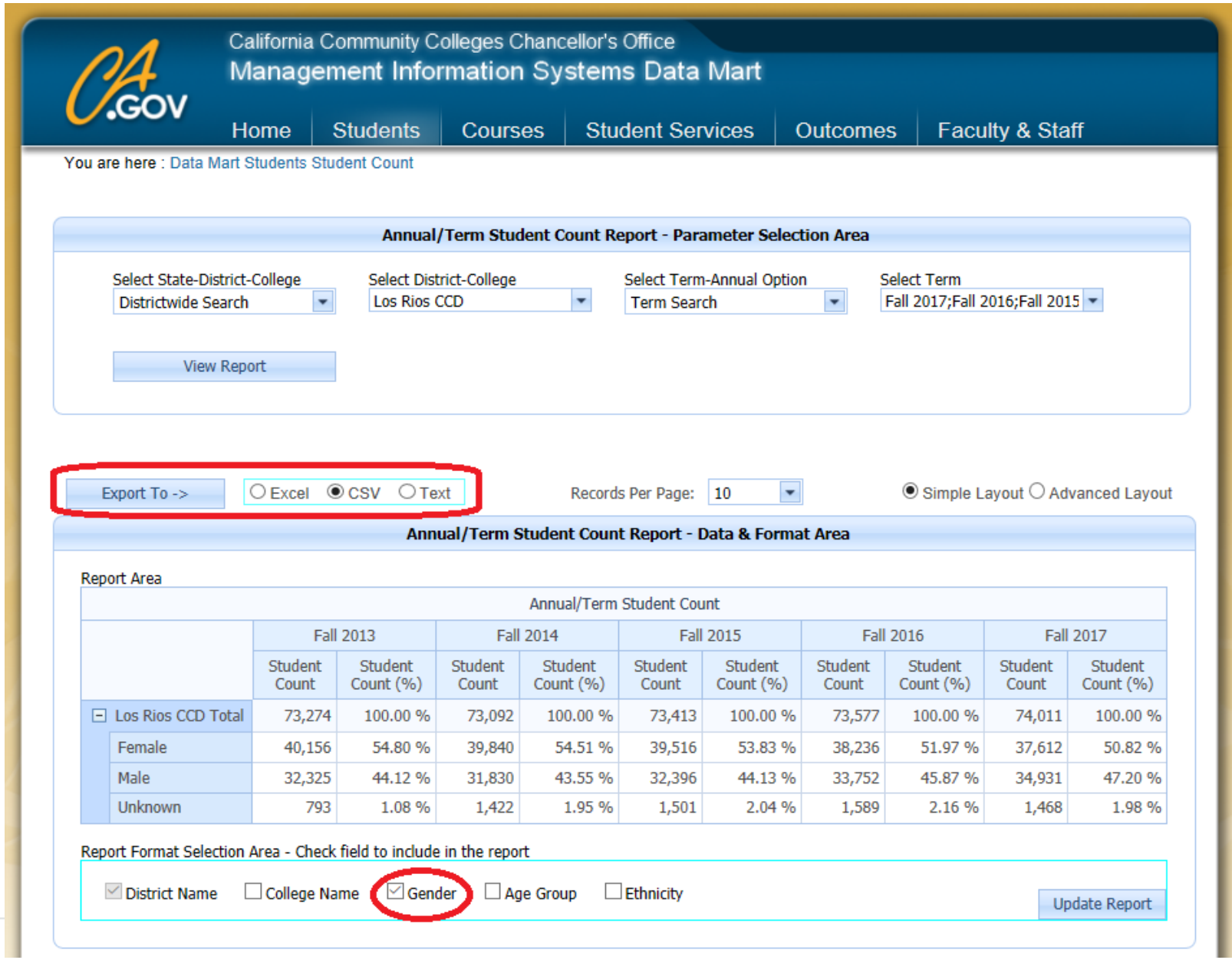
This time, we will extract the data for the student count by gender. We will follow the same steps as above

- Step 1: Go to this site: https://datamart.cccco.edu/Students/Student_Term_Annual_Count.aspx
- Step 2: Specify the District/College
- Step 3: Select "Term Search" and the following Terms: Fall 2013, Fall 2014, Fall 2015, Fall 2016, and Fall 2017
- Step 4: Click on "View Report"

Step 5: Select "Gender" at the bottom (see red oval)

Step 6: Click on "Update Report" at the lower right corner

Step 7: Export to CSV (see red oval)



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Part 3: Cleaning & Pivot Table

Step 1: Remove the columns with percentages

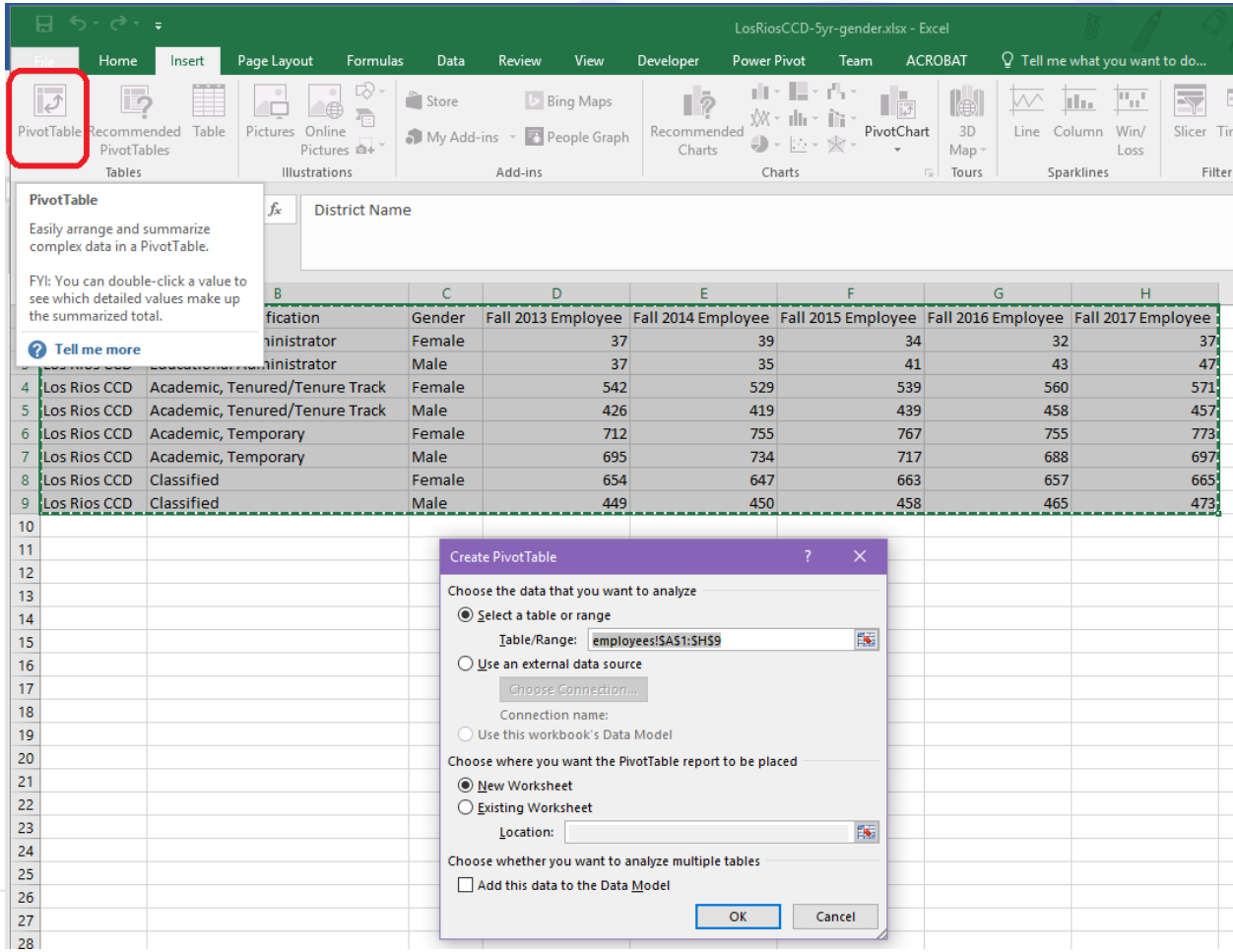
Step 2: Clean the table headings so that there's only one row for the table header:

- District Name
- Employee Classification
- Gender
- Fall 2013 Employee
- Fall 2014 Employee
- Fall 2015 Employee
- Fall 2016 Employee
- Fall 2017 Employee

Pivot Table

Step 3: Using the employee data, create a pivot table on a new worksheet

- Select the table in the employee data
- Go to Insert then click on Pivot Table (red box)
- Click “OK” to put the Pivot Table in a new worksheet.



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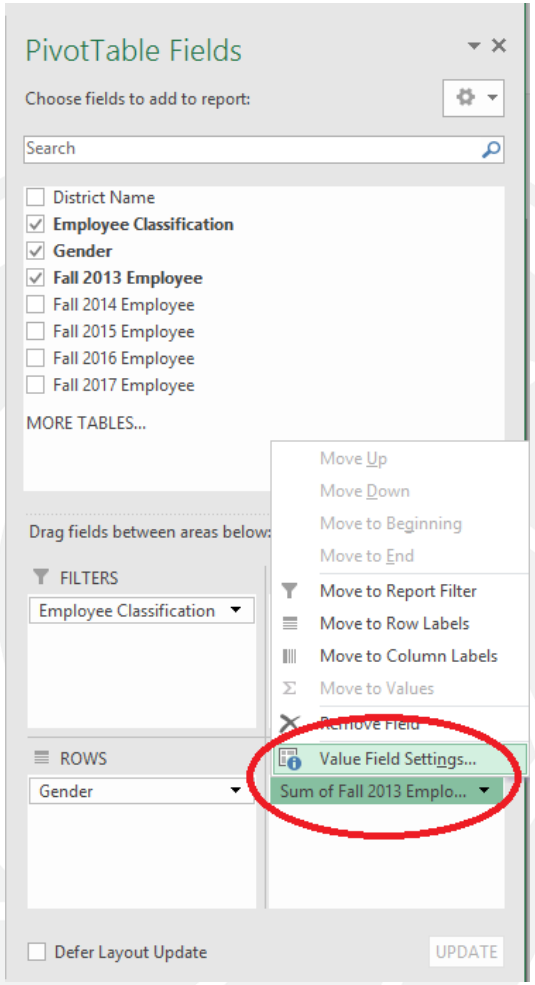
Step 4: Pivot Table Fields

Step 4: Specify the “Pivot Table Fields” by dragging and dropping the fields in the appropriate areas

- Drag and drop the “Employee Classification” field in the “FILTERS” area.
- Drag and drop the “Gender” in the “ROWS” area
- Drag and drop the “Fall 2013 Employee” in the “ ∑ VALUES” area.
- Click on the drop down arrow under the “ ∑ VALUES” that was specified, and change the “Value Field Settings” (see red oval)



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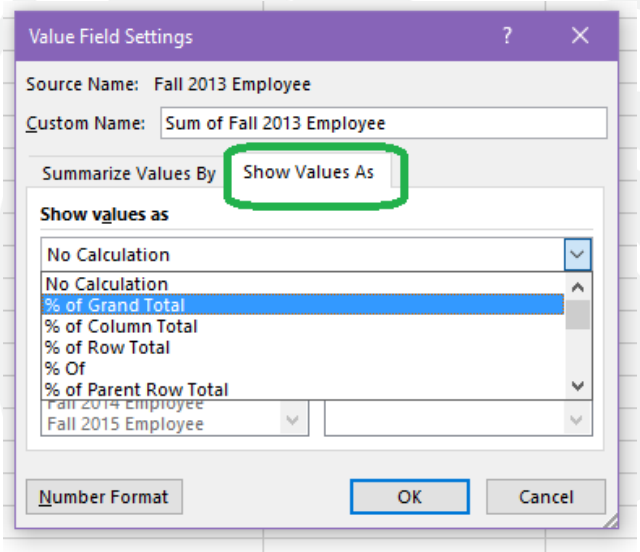
Step 4: Pivot Table Fields (continued)

- Change the default setting to “Sum”
- Click on the tab that says “Show Value As” and click on the drop down arrow to specify “% of Grand Total” (see green oval)
- Click OK or change the Custom Name to “% of Fall 2013 Employee”
- Do these steps for the remaining terms.



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Pivot Table for the % of Employees by Gender (Fall 2013 – Fall 2017)

	A	B	C	D	E	F
1	Employee Classification	(All)				
2						
3	**Row Labels**	**% of Fall 2013 Employee**	**% of Fall 2014 Employee**	**% of Fall 2015 Employee**	**% of Fall 2016 Employee**	**% of Fall 2017 Employee**
4	Female	54.76%	54.60%	54.76%	54.78%	55.00%
5	Male	45.24%	45.40%	45.24%	45.22%	45.00%
6	**Grand Total**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
7						

- Use the % in calculating the index or indices for the significantly underrepresented group analysis.

Significantly Underrepresented Group Analysis

$$Index = \frac{Actual\ Representation\ (\%)}{Projected\ Representation\ (\%)}$$

- If ***Index < 80%*** then the group is significantly underrepresented
- If ***Index ≥ 80%*** then the group is NOT underrepresented

Projected Representation

- Also known as the reference group
- Title 5 does not define the projected representation, thus it is a local decision
- It can be based on the following:
  - College/District demographics
  - Community / service area demographics
  - Labor market availability for the job category
  - Previous demographics of job applicants

Part 4: Index

- We will use the College/District demographics from Data Mart, in particular:

  Employee demographics = Actual Representation

  Student demographics = Projected Representation

- In this example, these are disaggregated by the gender variable.
- Step 1: Clean the data from the student demographics by removing the student counts. Keep only the percentages
- Step 2: Copy and paste the clean student demographics under the Pivot Table.

- Step 3: Create a new table for the Indices of Significantly Represented Group Analysis
- Step 4: Change decimal values to %
- Step 5: Identify any cells or indices that fall below 80%

	A	B	C	D	E	F
1	Employee Classification	(All)				
2						
3	**Row Labels**	**% of Fall 2013 Employee**	**% of Fall 2014 Employee**	**% of Fall 2015 Employee**	**% of Fall 2016 Employee**	**% of Fall 2017 Employee**
4	Female	54.76%	54.60%	54.76%	54.78%	55.00%
5	Male	45.24%	45.40%	45.24%	45.22%	45.00%
6	**Grand Total**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
7						
8						
9	Projected Representation					
10		Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017
11	Gender	Student Count (%)	Student Count (%)	Student Count (%)	Student Count (%)	Student Count (%)
12	Female	54.80%	54.51%	53.83%	51.97%	50.82%
13	Male	44.12%	43.55%	44.13%	45.87%	47.20%
14						
15						
16	**INDEX is (Actual)/(Projected)**	**Significantly Represented Group Analysis**				
17	Gender	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017
18	Female	100%	100%	102%	105%	108%
19	Male	=GETPIVOTDATA("% of Fall 2014 Employee",A3,"Gender","Male ")/C13			99%	95%
20		GETPIVOTDATA(data_field, **pivot_table**, [field1, item1], [field2, item2], [field3, ...)				
21						

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Significantly Underrepresented Group: In Summary

- Existence of a “significantly underrepresented group” is not dispositive that discrimination has occurred
- A district’s determination that a monitored group is significantly underrepresented in a job category **should prompt the district to review existing employment practices** to identify any non job-related barriers to employment and amend employment policies and practices as appropriate

Conclusion (Exercise 1)

- In this example, we did not find any significant gender underrepresentation during the past 5 years, because all indices are at least 80%.

Gender	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017
Female	100%	100%	102%	105%	108%
Male	103%	104%	103%	99%	95%

Exercise 2: Hands-On Activity

- Replicate Exercise 1 using the Ethnicity variable.
- Specify your own college/district for both the employee data and student data.
- ***Hint***: *The Ethnicity variable for the Employee Data is slightly different from the Student Data. The Filipino subgroup doesn't show up in the Employee data, only in the Student data. Make sure that you add up the Filipino subgroup with the Asian subgroup.*

Group Discussion

- Did you find any significant ethnic/racial underrepresentation?
- Do you see any trends in the longitudinal data?
- How would you share this information to your colleagues, and start a conversation about building diversity in the workplace?

Want more analysis?

EEOC Adverse Impact Test (4/5 Rule or 80% Rule)

Steps:

- Calculate the rate of selection for each group:

$$Selection\ Rate = \frac{\text{number or employees hired}}{\text{number of applicants}}$$

- Observe which group has the highest selection rate
- Calculate the impact ratios:

$$Impact\ Ratio = \frac{Selection\ Rate\ of\ Group\ (\%)}{Highest\ Selection\ Rate\ (\%)}$$

If ***Ratio < 80%*** then adverse impact exists

If ***Ratio ≥ 80%*** then no adverse impact

EEOC's Adverse Impact Test (aka "The 4/5ths Test")

Under the EEOC's Adverse Impact Test, an adverse impact occurs when the selection rate for any group is less than 4/5ths (80 percent) of the selection rate for the group with the highest selection rate

If ***Ratio < 80%*** then adverse impact exists

If ***Ratio ≥ 80%*** then no adverse impact

Example: Coronado CCD

Applicants	Hired	Selection Rate Percent Hired
80 White	48	48/80 or 60%
40 Black	12	12/40 or 30%
24 Hispanic	6	6/24 or 25%

1. Calculate the rate of selection for each group
2. Observe which group has the highest selection rate
3. Calculate the impact ratios, by comparing the selection rate for each group with that of the highest group
4. Observe whether the selection rate for any group is less than 4/5ths the selection rate for the highest group

Example: Coronado CCD

Applicants	Hired	Selection Rate Percent Hired
80 White	48	48/80 or 60%
40 Black	12	12/40 or 30%
24 Hispanic	6	6/24 or 25%

Analysis of Black Selection Rate

The black selection rate (30 percent) is 50 percent of the white selection rate (60 percent). Since 50 percent is less than 4/5 (80 percent), an adverse impact exists under the EEOC's Adverse Impact Test

.30 (black selection rate) ÷ .60 (highest selection rate) = .50 (black selection rate as a percentage of the highest selection rate)

50% < 80%, so Adverse Impact exists

Example: Coronado CCD

Applicants	Hired	Selection Rate Percent Hired
80 White	48	48/80 or 60%
40 Black	12	12/40 or 30%
24 Hispanic	6	6/24 or 25%

Analysis of Hispanic Selection Rate

The Hispanic rate (25 percent) is 42 percent of the white selection rate (60 percent). Since 42 percent is less than 4/5 (80 percent), an adverse impact exists under the EEOC's Adverse Impact Test

.25 (Hispanic selection rate) ÷ .60 (highest selection rate) = .42 (Hispanic selection rate as a percentage of the highest selection rate)

42% < 80%, so Adverse Impact exists

Adverse Impact Test: In Summary

- If a district's analysis of employment data under the EEOC's Adverse Impact Test shows that an adverse impact exists, it is not dispositive that discrimination has occurred
- The EEOC's Adverse Impact Test is a self-described "rule of thumb," and not a legal definition
- It is a statistical tool established by the EEOC to determine whether there is an initial inference of adverse impact

Adverse Impact Test: In Summary

- When a district finds that a monitored group is adversely impacted, it should assess hiring policies and practices to determine why certain groups were eliminated at a substantially higher rate than other groups
- If the elimination was based on non-job related factors, the district has a responsibility to amend its hiring practices to ensure that all applicants have an equal opportunity for employment at the district
- 4/5ths Test: May be applied to each step along the hiring process (initial – qualified pool, interviews, offers)

Sample Sizes are Important!

Sample Sizes are Important!

- Title 5, section 53001, provides that a disparity identified in a district's selection process will not be considered to constitute adverse impact "if the numbers involved are too small to permit a meaningful comparison"
- The longitudinal analysis of employment data involves several local decisions and should be implemented at each district in a manner that makes the most sense at the local level

Additional Readings

- EEO Longitudinal Data Guide:
  http://extranet.cccco.edu/Portals/1/Legal/EEO/2018-Longitudinal-Data-Guide.WEB.pdf
- Fairlie, R.W., Hoffman, F., & Oreopoulos, P. (2014). A Community College Instructor Like Me: Race and Ethnicity Interactions in the Classroom. *American Economic Review*, 104(8): 2567-2591. https://people.ucsc.edu/~rfairlie/papers/published/aer%202014%20-%20minority%20instructors%20and%20community%20college.pdf
- Morris, S. B. (2001). Sample size required for adverse impact analysis. *Applied HRM Research*, 6, 13-32. https://pdfs.semanticscholar.org/877f/7acd7c646a21f4947166a07f41664dcabe95.pdf
- Adverse Impact Research and Resources:
  http://www.adverseimpact.org/AdverseImpactResearch.htm
- U.S. Equal Employment Opportunity Commission:
  https://www.eeoc.gov/laws/guidance/compliance.cfm

Questions

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