**St. Paul city salary data exercise—Excel**

Use the Excel file called “stpaulsalaries.xls”

The data contains one salary record for each person paid by the city of St. Paul in the 2009 calendar year. It shows their total wages (“total\_wages”), plus fields that break that figure down into overtime wages (“OT\_pay”) and other pay (“Other\_Pay”-- which could include things like bonuses, vacation-sick payout, etc). In addition to the dollar amount paid out in overtime, it also shows the number of OT hours (“OT\_hours”) the person worked (which can be two very different because some people have higher or lower pay rates that would influence the dollar amount yielded from an hour of OT). It also shows their job title, department, bargaining unit (union), employment start date, and years of service.

Let’s start by making a summary table to see what patterns we see at the department level. Using Excel 2007 (or later) you can make one PivotTable that has all of the fields we need. (earlier versions of Excel can’t do this).

Step 1: Make a PivotTable that has “Dept” as the row and the following fields in the Data section: TotWages (sum), Empid (count), OT\_Pay (sum), OT\_Hours (sum). Make sure to double-click on the items in the data section to change them to “sum” or “count” as identified here.

Then copy and paste just the contents of the PivotTable (don’t take the headers or the Grand total) and paste it into a new worksheet. You should have a new table that shows one record for each department and the total wages paid, the number of employees paid, the total overtime paid out and the total number of overtime hours.

**Using the new table:**

1. Rank the departments on total wages, using the RANK function. Which department paid out the most? **ANSWER: POLICE**
2. Calculate the average salary by department (divide total wages by number of employees) in a new column. Which department had the highest average salary and what was the dollar amount? **ANSWER: CITY ATTORNEY, $73,055**
3. Calculate the percentage that overtime pay makes up of the total wages. What department has the highest rate of OT pay and what was percentage? **ANSWER: PUBLIC WORKS SNOW TAGGERS, 31%**
4. Calculate the average overtime hours per person. Which department had the highest rate and what was the rate? **ANSWER: POLICE ECC, 190**
5. What was the number of OT hours clocked by city employees, in total, per week? (hint: you need to do two calculations to get this) *4,373 hours per week. To get this, total the “othours” column. Then divide that answer by 52.*

**Go back to the original data:**

1. Who was the highest paid person in 2009 and what was the dollar amount? *Dennis Appleton. Get this by sorting the table on “totwages” column.*
2. Calculate percentage OT makes up of total pay for all individuals. Who has the highest and what was the dollar amount? Do you see anything else that’s interesting and/or newsworthy here? *Dennis Bonner. What’s interesting: Many of those with the highest percentages are listed as resigned or laid off. Get this by creating a new column and dividing OTpay (column R) by TotWages (column N) to get the percentage that OT makes up of each person’s total wages. Sort the table on this new column.*
3. Who got paid the most overtime money in total and how much? *Chou Yang, $32,926. Sort the table on “Otpay” column.*
4. For those with OT hours, calculate how many extra hours they clocked each week (52 weeks per year). Who had the most and how much? *Chou Yang — 18.3 hours per week. Create a new column and divide OTHours (column P) by 52 to get hours per week.*
5. Which bargaining unit has the highest average pay in 2009 and how much?

*Fire Supervisory Association, $117,112. Create a PivotTable putting “bargunit” in the Row section and “TotWages” in the Data. Double-click on TotWages and change it to “average” instead of count. Once you have your PivotTable, put your cursor on the number next to the first bargaining unit (column B) and then go to the Data menu and choose Sort. Click on Descending and it will sort your PivotTable on the B column so that you get the highest average on top.*

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