

April 12, 2009

**To:** City of Portland  
**Fr:** Davis, Hibbitts & Midghall, Inc.  
**Re:** You City, Your Choice-City of Portland: MaxDiff Results

## I. Introduction: About MaxDiff

MaxDiff is an approach for obtaining importance scores for multiple items. It has been shown to deliver greater discrimination among items and between respondents than the more commonly used rating scale questions. Our experience, validated by the public opinion and market research community, has shown that rating scale questions often do not provide variation between test items that are statistically significant. MaxDiff is more effective for two reasons: First, respondents must make trade-offs in order to choose the best and worst of the three displayed items. (See Diagram 1 below) They do not rate items in isolation, but in competition. Second, the choices are made without the use of a scale. (Scales introduce the opportunity for interpretation bias – different individuals could feel an item is equally important yet select a different number to represent that feeling.) For these reasons, MaxDiff results are able to demonstrate greater variation between test items.

**Diagram 1: One of twelve MaxDiff questions displayed in survey**

Among the following items ...

- 1) Which is most important for your local government officials to fund with taxpayer dollars?
- 2) Which is least important for your local government officials to fund with taxpayer dollars?

Most Important		Least Important
<input type="radio"/>	Ensuring access to health care and other human services for children and low income families	<input type="radio"/>
<input type="radio"/>	Improving public education by providing supplemental services to school districts	<input type="radio"/>
<input type="radio"/>	Promoting economic vitality and access to quality jobs for all	<input type="radio"/>

Select one item for Most Important and one item for Least Important

## II. Interpreting MaxDiff Data

Our survey was conducted online with 205 City of Portland residents randomly selected from an established panel of city residents to reflect the demographics for gender, age, location, and household income of all residents. It was designed to determine residents' prioritization of twelve local government services to complement the findings of the 2009 YCYC- City of Portland telephone survey.

The exercise presented a different group of three services to each respondent a total of twelve times. From each group of three, respondents selected the most and least important service for their “local government officials to fund with taxpayer dollars.” By breaking up the twelve items into groups of three, the exercise becomes easier for respondents, and thus increases validity. At the same time, exposing each respondent to different combinations of three services ensures the experiment is balanced. Each service item is displayed an equal number of times and it’s displayed in each position (top, middle, bottom) the same number of times as every other service item. This ensures that each item has an equally likely chance of being selected Most and Least Important.

This method reveals each respondent’s rank order of the items along with their relative strength (score) for each item. In analysis a Hierarchical Bayes algorithm is employed to determine the relative strength of each item for each respondent. These scores are then converted to a 100 point scale to most clearly show the relative strength of each item. The result from this procedure provides individual item scores for each respondent that add up to 100.

A good way to interpret Max/Diff results is to consider them analogous to those that would be obtained if we asked respondents to allocate points among the twelve items so that their summed total equaled 100. Thus, the expected score for each of the twelve items is 8.3 (100/12). (In other words, each item has an 8.3% chance of being most important.) Thus, items with scores above 8.3 are above average in importance for the public’s support of using tax dollars. Conversely, items with scores below 8.3 are below average in importance for funding with taxpayer dollars.

### **III. Results**

The results for the items in the MaxDiff exercise have been divided into four categories – most important, high importance, average importance and low importance – based on the magnitude and similarity of their importance scores. Starting with the expected score of 8.3, and defining that as one with average importance, allows us to call items with scores above 8.3 as having higher than average importance and items with scores less than 8.3 as having less than average importance to the population. Since there is a sizeable gap between the top two scores and the next cluster of five, we determined that labeling these two as “most important services” was accurate and appropriate.

**Table 1: Complete Results (weighted)**

Item Description	Total Score
<b>Most Important Service</b>	
1. Promoting economic vitality and access to quality jobs for all	13.7
2. Ensuring access to health care and other human services for children and low income families	13.3
<b>High Important Service</b>	
3. Maintaining a financially stable city and county	10.9
4. Ensuring a safe and peaceful community	10.2
5. Ensuring decent, affordable housing	10.1
6. Ensuring services for seniors and the disabled	9.7
7. Improving public education by providing supplemental services to school districts	9.6
<b>Average Importance Service</b>	
8. Building a livable city and county through good planning and well managed growth	8.7
<b>Low Importance Service</b>	
9. Improving and maintaining the transportation system	5.7
10. Maintaining and improving our parks, green spaces, water and air sheds	4.4
11. Promoting the inclusion of under-represented neighborhoods and groups in public activities and services	2.5
12. Keeping the central city vital	1.6

Source: Davis, Hibbitts, & Midghall, Inc., April 2009

The above results reveal that eight of the twelve services are considered at or above average in importance to city residents. Among these eight, the two standing out as having highest importance are:

- Promoting economic vitality and access to quality jobs for all
- Ensuring access to health care and other human services for children and low income families

The next five, labeled High Importance, are separated from the top group by 2.4 points. The High Importance group range from 9.6 to 10.9 – a mere separation of 1.3 points between the top and bottom service items. Only one service scored at about the expected average. “Building a livable city/county” with a score of 8.7 is ranked by the public as having average importance.

Four of the twelve service items scored far below the expected average and are thus in our “Low Importance Services” category. “Keeping the central city vital” was ranked least important by a sizeable margin. “Promoting the inclusion of under-represented” was second least important, “Maintaining and improving parks...” was third least important, with “Improving and maintaining transportation” ranked just above these three at a score of 5.7.

The table below includes two additional columns to the one displayed earlier. The Strongest Support column shows the two subgroups with highest average score for each service item. The Weakest Support column shows the two subgroups with the lowest average score for each service item. An \* after a subgroup score indicates that there is a statistically significant difference between that subgroup's score and one or more other's score within that same subgroup category.

**Table 2: Segmentation Analysis**

Item Description	Total Score	Strongest Support	Weakest Support
<b>Most Important Service</b>			
1. Promoting economic vitality and access to quality jobs for all	13.7	Ed: HS or < (15.7) Income \$75K+*, Att. School (15.0)	Inc. \$50-75K (12.5)* Emp. - Other (13.0)
2. Ensuring access to health care and other human services for children and low income families	13.3	Att. school (15.5)* Females (15.1)*	Income \$75K+ (10.9)* Males (11.4)*
<b>High Importance Service</b>			
3. Maintaining a financially stable city and county	10.9	Income \$75K+ (12.8)* Emp. Full-time(12.6)*	Income <\$30K (8.6)* Att. school (8.7)*
4. Ensuring a safe and peaceful community	10.2	Income \$75K+ (11.9)* Ed: HS or < (11.4)	6-10 yrs in Ptld. (8.1) Emp. Part-time (8.4)
5. Ensuring decent, affordable housing	10.1	Att. School (11.9)* Inc. <\$30K (11.3)*	Income >\$75K (7.7)* Emp. Full-time (8.6)
6. Ensuring services for seniors and the disabled	9.7	Age 55+ (12.9)* Inc. <\$30K*, In Ptld. >21yrs* (11.5)	Age 18-34 (6.7)* In Ptld. <5yrs (7.3)*
7. Improving public education by providing supplemental services to school districts	9.6	Have Children (13.4)* Non-Caucasian (12.2)*	Age 55+ (5.9)* No Children (8.1)*
<b>Average Importance Service</b>			
8. Building a livable city and county through good planning and well managed growth	8.7	Inc. \$75K+ (10.1)* Coll. Deg.+*, Emp. Full-time (10.0)*	Non-Caucasian (6.9) Att. School (7.2)*
<b>Low Importance Service</b>			
9. Improving and maintaining the transportation system	5.7	11-20 yrs in Ptld. (6.4)* Male*, Emp.-other, Inc. <\$30K (6.3)	6-10 yrs in Ptld. (4.1) Have Children*, Inc. \$30-50K (4.2)
10. Maintaining and improving our parks, green spaces, water and air sheds	4.4	6-10 yrs in Ptld. (6.1)* Age 18-34 (5.7)*	Age 55+(3.0)* 21+ yrs. in Ptld. (3.4)
11. Promoting the inclusion of under-represented neighborhoods and groups in public activities and services	2.5	Inc. <\$30K (3.3)* Att. School (3.1)	Inc. \$50-75K (1.9) Inc. \$75K+ (2.0)
12. Keeping the central city vital	1.6	Loc. West (2.5) Males (2.2)*	Ed: HS or < (1.0) Females*, Att. School (1.1)

\* Statistically significant difference

Source: Davis, Hibbits, & Midghall, Inc., April 2009

In addition to the information revealed in the table above, the cross tabulation tables reveal additional important information.

- More significant item ranking differences occur between income segment subgroups than any for any other segment. Among the different income subgroups, significant differences exist for 7 of the 12 items, including the top six most important services.
- The two strongest differences between segment subgroup rankings occur between the youngest and oldest age residents.
  - o For “Ensuring services for seniors and the disabled” the gap is 6.2: 12.9 for those 55+ years old vs. 6.7 for those 18-24 years old
  - o For “Improving public education by providing supplemental services to school districts” the gap is 6.0: 11.9 for those 18-24 years old vs. 5.9 for those 55+ years old

#### **IV. Summary**

The MaxDiff services exercise reveals that eight of the twelve tested items were ranked at or above average importance. Only four items received much lower scores than the expected 8.3 for a 12-item list. At this point in time,

- Promoting economic vitality and access to quality jobs for all, and
- Ensuring access to health care and other human services for children and low income families

are the services ranked of highest importance by City of Portland residents for funding with taxpayer dollars providing good validation of the telephone survey findings.