Trends in Mail Survey Response Rates: An Analysis of Monthly Response Rates

Virginia M. Lesser, Danny Yang, and Lydia Newton
Survey Research Center
and Department of Statistics,
Oregon State University

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Outline

- Background on this repeated survey.
- Questionnaire changes over time.
- Response rates over time.
- Statistical model to estimate change in response rate attributed to explanatory variables (e.g., time).
- Compare response rates by age and gender.
- Conclusions
Response Rates in Monthly Survey

- Monthly survey (n=400) conducted for the Oregon Department of Motor Vehicles (DMV) since 1994.
- Satisfaction survey of visitors to DMV field offices.
- Adjusted response rates (ARR) computed for each month by age, gender and age by gender combination since 2001.
**DRIVER AND MOTOR VEHICLE SERVICES**
**CUSTOMER SATISFACTION SURVEY**

With your help, we would like to give you the quality of service you want. *Please* take a minute to complete this questionnaire.

1a. Please tell us how important the following services are to you. *(Circle one number for each service)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Very Important</th>
<th>Somewhat Important</th>
<th>Not Too Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Employee courtesy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>B. Employee helpfulness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>C. Employee efficiency</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>D. Ability to answer questions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E. Length of time waiting to be served</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>F. Telephone service</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1b. Which of the above do you think is most important? *(Circle one letter)*

   - A
   - B
   - C
   - D
   - E
   - F

2. Please rate the service you received when you last visited a DMV office. *(Circle one number for each service)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Employee courtesy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>B. Employee helpfulness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C. Employee efficiency</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>D. Ability to answer questions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>E. Length of time waiting to be served</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>F. Telephone service</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

3a. Below is a list of some areas in which DMV has recently made efforts to improve service. Please indicate whether service in these areas is better than needed, about right, or needs improvement. *(Circle one number for each service)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Service is Better Than Needed</th>
<th>Service is About Right</th>
<th>Service Still Needs Improvement</th>
<th>Not Sure</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Less waiting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>B. Convenient office location</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C. Saturday office hours</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>D. Evening office hours</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

3b. Which of the above do you think still needs the most improvement? *(Circle one letter)*

   - A
   - B
   - C
   - D

4. DMV is studying the use of optional services such as fee incentives and the use of credit and debit cards. Please indicate whether you, personally, would use these services if available. *(Circle one number for each service)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes, Would Use</th>
<th>Not Sure</th>
<th>No, Would Not Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Use an automated teller machine with a credit/debit card</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B. Do business by telephone using a credit/debit card</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>C. Use the telephone with fees billed to your phone (900 service)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>D. Do business by mail to receive a discount</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

5. Is there anything else you would like to say about the service we provide?

*(THANK YOU FOR HELPING)*
DMV CUSTOMER SATISFACTION SURVEY

1. Please rate the service you received during your last visit to DMV as excellent, good, fair, or poor. (Circle one number for each service)

<table>
<thead>
<tr>
<th>EXCELLENT</th>
<th>GOOD</th>
<th>FAIR</th>
<th>POOR</th>
<th>DON'T KNOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

   a. Employee courtesy
   b. Employee helpfulness
   c. Employee efficiency
   d. Ability to answer questions
   e. Length of time waiting for service

2. During your last visit to DMV, approximately how many minutes did you wait until you were served? (Circle only one number)

1. 5 MINUTES OR LESS
2. 6-10 MINUTES
3. 11-15 MINUTES
4. 16-20 MINUTES
5. OVER 20 MINUTES

3. Do you feel this was a reasonable time to wait? (Circle one number)

1. YES, REASONABLE
2. NO, NOT REASONABLE

4. Did you complete your DMV business in one trip or did it take more than one? (Circle one number first then follow arrow to next question)

1. ONE TRIP (After circling ONE TRIP, go to question 5 on the next page)
2. MORE THAN ONE TRIP

4a. If you had to make more than one trip to the DMV office, please indicate whether or not the following explains the reasons why. (Circle YES or NO for each)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

a. Failed a Test
b. Didn't have correct/acceptable identity documentation
c. Didn't bring correct/acceptable proof of address documentation
d. Could not pay fees
e. Social Security number failed to verify
f. The wait was too long
g. Other (Describe)
5. Have you called DMV during the last 3 months for any reason? (Circle one number first then follow arrow to next question)

1 NO  \(\rightarrow\) (After circling NO, go to question number 6)

2 YES

5a. Please rate the service you received from the phone agent as excellent, good, fair, or poor. (Circle one number for each service)

<table>
<thead>
<tr>
<th>EXCELLENT</th>
<th>GOOD</th>
<th>FAIR</th>
<th>POOR</th>
<th>DON’T KNOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Agent’s courtesy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b. Agent’s helpfulness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c. Agent's understanding of your need</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>d. Agent’s ability to answer your questions accurately</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>e. Agent’s ability to answer your questions efficiently</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>f. Agent’s ability to provide information needed to complete your transaction...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>g. Timeliness of follow up call received from the agent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

6. Do you use the Internet? (Circle one number first then follow arrow to next question)

1 NO  \(\rightarrow\) (After circling NO, go to question 7)

2 YES

6a. Before receiving this questionnaire, did you know that you could do each of the following on the DMV website? (Circle YES or NO for each)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Renew your vehicle registration (provided your vehicle doesn’t have to be inspected by the Department of Environmental Quality)?</td>
<td>1</td>
</tr>
<tr>
<td>b. Change your address?</td>
<td>1</td>
</tr>
<tr>
<td>c. Notify DMV that you sold your vehicle?</td>
<td>1</td>
</tr>
</tbody>
</table>

7. What else would you like to tell us about the services or information DMV provides? We encourage your feedback and suggestions on DMV interactions, printed materials, and our Website.
One page quex. 4 contacts: initial, pc, 1st and 2nd followup.
Adjusted Response Rates (ARR) 1994 Apr. - 2011 May

One page quex. 4 contacts: initial, pc, 1st and 2nd followup.

2 page quex: 3 contacts: preletter, initial, 1st followup
Adjusted Response Rates (ARR) 1994 Apr. - 2011 May

One page quex.
4 contacts: initial, pc, 1st and 2nd followup.

2 page quex:
3 contacts: preletter, initial, 1st followup

2 page quex:
4 contacts: preletter, initial, PC, one followup

Year/Month


ARR (%)
Analysis

Desire to account for the change in mailing methodology and questionnaire length at two time points in a time series analysis:

February 2001:

1. Change in mailings from 1\textsuperscript{st} mailing, PC, 2\textsuperscript{nd}, 3\textsuperscript{rd} mailings TO preletter (from DMV), 1\textsuperscript{st}, 2\textsuperscript{nd} mailing.
2. Change from one to two page questionnaire

July 2003: PC added back into the mailings.
Considerations for Model

- Account for the three time periods with different data collection methods.
- Many variables linked to three time periods, e.g., number of mailings, number of questions.
- Other covariates included in model: minor consent, photo identification questions, month.
- Account for temporal correlation.
Model Results

- Piecewise regression model to account for changes.
- Fit a second order autoregressive model to account for temporal correlation. This implies the monthly adjusted response rates is correlated with the previous two month observations.
- Regression coefficients for month were highly significant (p-value<0.001). No other variables were significant (p-values>0.10).
DMV ARR Estimated Piecewise Linear Trend, 1994 April - 2011 May

Note scale difference
DMV ARR Estimated Piecewise Linear Trend, 1994 April - 2011 May

ARR decreases 1.4% per year

February 2001
DMV ARR Estimated Piecewise Linear Trend, 1994 April - 2011 May

ARR decreases 1.4% per year

ARR decreases 7.1% per year

July 2003
DMV ARR Estimated Piecewise Linear Trend, 1994 April - 2011 May

ARR decreases 0.55% per year

ARR decreases 1.4% per year

ARR decreases 7.1% per year
Other Data Collected in Study

- Gender and age collected on entire sample since 2001:
  - Lowest response rate for males.
  - Decreasing response rates for all age groups.
  - Lowest response rates found in the younger age groups.
Adjusted Response Rate by Gender

- Lowest for male.
- Response rates more similar in recent years.
Adjusted Response Rate by Age Group

- <=28
- 28-38
- 38-48
- 48-58
- >58

28-48 largest drop
Adjusted Response Rate for Females and Age Group

- Female <=28
- Female 28-38
- Female 38-48
- Female 48-58
- Female >58

38-48 largest drop
Adjusted Response Rate for Males and Age Group

- Male <=28
- Male 28-38
- Male 38-48
- Male 48-58
- Male >58

28-38 largest drop
Adjusted Response Rate by Gender and Age Group
Response Rates
Two Other Repeated Mail Surveys*

<table>
<thead>
<tr>
<th>Year</th>
<th>General</th>
<th>Year</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>44</td>
<td>1993</td>
<td>65</td>
</tr>
<tr>
<td>2001</td>
<td>44</td>
<td>1996</td>
<td>72</td>
</tr>
<tr>
<td>2002</td>
<td>43</td>
<td>1999</td>
<td>74</td>
</tr>
<tr>
<td>2004</td>
<td>41</td>
<td>2002</td>
<td>72</td>
</tr>
<tr>
<td>2006</td>
<td>43</td>
<td>2005</td>
<td>65</td>
</tr>
<tr>
<td>2008</td>
<td>35</td>
<td>2008</td>
<td>52</td>
</tr>
<tr>
<td>2010</td>
<td>33</td>
<td>2011</td>
<td>54</td>
</tr>
</tbody>
</table>

*Four Page
Conclusions

- Mail response rates decreasing:
  - ~70% (1994) to ~40% (2011)
  - at 1.4% per year in the 1990’s and ½ percent per year since 2003.
- Currently at 40% with 4 contacts, 2 page questionnaire.
- Impact of doubling questionnaire length and dropping a contact changed the nonresponse rate from 1.4% to 7.1% per year.
- Patterns of nonresponse for gender (lower for males) and age (lower for young).