SUPPORTING STATEMENT
UNITED STATES PATENT AND TRADEMARK OFFICE
Customer Panel Quality Survey
OMB Control Number 0651-0057

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Universe and Respondent Selection

The respondent pool for this survey is made up of the businesses, organizations, and individuals who frequently file patent applications. The USPTO plans to survey large, medium, and small-sized domestic corporations, universities and other non-profit research organizations, and independent inventors. Foreign entities will not be included in the sample frame.

The target population consists of individuals associated with USPTO top filers (e.g., firms at a given address who have filed six or more patent applications in the past year). The sample unit will be the USPTO-registered agents/attorneys associated with the top filers and also independent inventors that filed six or more patents in the past 12 months. The target population typically accounts for over 85% of all patent applications filed in a given fiscal year.

2. Procedures for Collecting Information

The Customer Panel Quality Survey will use a longitudinal, rotating panel design. The sampling plan is included in this submission for review (Ref. A). The sampling plan also contains information about the respondent pool and the response rate.

The USPTO's survey contractor, Westat, will mail the survey to all of the sampled respondents. A personalized label will be inserted on the survey packet envelope in order to reach the specified respondent. The survey packet will contain the paper version of the questionnaire and a cover letter explaining that the USPTO is sponsoring the survey and that all responses will remain confidential. The cover letter will also contain the username, password, and the 5-digit survey ID number. The electronic and paper surveys will mirror each other.

During the follow-up non-response prompting calls, Westat employees will use a script developed in collaboration with the USPTO. For all nonrespondents a reminder postcard will be sent to encourage survey participation.

In order to improve the response rate achieved in the 2002 survey, a pre-notification letter will be sent to all groups informing them of the purpose of the survey and will include instructions for completing the survey online.

The survey packet will include the three-page questionnaire and a postage-paid pre-addressed return envelope. The cover letter will be printed on USPTO letterhead and signed by the Commissioner of Patents.

3. Methods to Maximize Responses

In order to maximize the number of responses received from the survey, the USPTO plans to follow several well-established survey procedures. First, all sampled respondents will receive a pre-notification letter signed by the Commissioner. The letter will explain the importance of the study and encourage respondent cooperation. Next, all sampled respondents will receive the paper survey in the mail. Follow-up contact will be made after the initial survey is sent. One week after the initial survey mailing, all nonrespondents will be sent a thank you/reminder postcard in the mail. Two weeks after the initial survey is mailed, we will telephone all of the nonrespondents to prompt them to answer either the paper or internet version of the survey. A script has been developed for these phone calls so that everyone conducting these interviews asks the same questions, in the same manner.

In order to determine how the nonresponse bias affected the results of the survey, Westat conducted a nonresponse follow-up study during Waves 6 and 7 for the survey. The USPTO was provided with the analysis of the findings. The objective of the study was to try to get a picture of how the nonrespondents would have responded to the main survey if they had actually responded to the survey. The study was conducted because the nonresponses can cause bias in the survey estimates, which is itself affected by the response rate to the survey and the differences between those who responded to the survey and those who did not respond.

As part of the study, Westat sent a postcard to those who did not respond to the original survey and who now were rotating out of the survey sample. The postcard contained one question concerning overall examination quality that was asked in the original survey. This question was also asked in the original survey; the only difference between the two was that the follow-up question had an additional answer that was not included in the original survey. Half of the sample in the study received a white postcard and the other half received a colored postcard to see if the colored card would help increase the response rates.

The follow-up study compared the responses to the overall examination quality question between those who responded to the question in the original survey in the outgoing panel with those that responded to the follow-up postcard (who were also in the outgoing panel). In this study, it is assumed that the respondents to the follow-up survey are like the nonrespondents to the original survey and that there are indications that the survey nonresponses are causing a potential bias. The results of the follow-up study were used to help answer the following questions:

1. How different are the Wave 6/7 respondents from the follow-up respondents?

2. How different are the follow-up respondents from the follow-up nonrespondents?

3. Do the results impact what can be done in weighting to reduce the bias due to nonresponse?

4. What is the impact of the colored postcard on the follow-up response rates?

Nonresponse bias is affected by two different items: the nonresponse rate and the differences between respondents and nonrespondents. While the response/nonresponse rate is known, the differences between those who respond and those who do not is unknown. The follow-up study attempts to measure the difference between the respondents and nonrespondents. The nonresponse bias is calculated using the following equation for a sample mean:

$$Bias(\bar{y}_R) = (1 - W_R)(\bar{Y}_R - \bar{Y}_N),$$

where W_R is the weighted unit response rate, $\bar{Y}_R$ is the population mean of the respondent stratum, and $\bar{Y}_N$ is the population mean of the respondent stratum, and is the population mean for the nonrespondent stratum. While the response rate is universally recognized as a measure of survey quality, the difference between the respondents and nonrespondents is just as important in determining the nonresponse bias. Weighting adjustments are used to reduce the nonresponse bias (although some nonresponse bias will remain in the survey estimates).

However, in the case with the nonresponse follow-up sample, the bias can be written as

$$Bias(\bar{y}_R) = (1 - W_R)(\bar{Y}_R - (\bar{Y}_{FU} + \bar{Y}_{NR}))$$

where $\bar{Y}_{NR}$ is the population mean of the follow-up nonrespondent stratum, and $\bar{Y}_{FU}$ is the population mean for the follow-up respondent stratum.

A bivariate analysis (response indicator versus each auxiliary variable) compares the distribution of the participating households to the distribution of the total eligible sample of households for several auxiliary variables. Survey base weights were used to account for the unequal within-household probabilities of selection, and replicate weights were used to adequately reflect the impact of the sample design on variance estimates. The weights for the follow-up respondents were adjusted to account for nonrespondents to both the main survey and the follow-up. This assumes that nonrespondents were more similar to the follow-up respondents than the original survey respondents. Together with the main sample respondent, the weights account for the entire eligible population. Adjustment cells were created using the Search software (WesSearch) using the same approach used in the normal weighting procedure.

To test for statistical differences, the distribution of the patent examination quality question for the wave respondents was compared with the distribution for follow-up respondents and similarly within the follow-up study for the white and colored postcards. To test the categorical responses, the hypothesis of independence between the characteristic and participation status was tested using a Rao-Scott modified Chi-square statistic at the 10 percent level. The average score of the categorical responses was computed as a continuous variable, with the larger average score the more favorable the response. The difference between means was tested using a *t* test. The continuous variables were tested using the Benjamin-Hochberg procedure to control the overall false discovery rate for a family of comparisons.

Westat analyzed the results of this study, prepared a report and a summary of the report, and submitted both to the USPTO. Both of these items are attachments to this submission (Ref. B). Some of the conclusions made concerning the survey were:

- There are no statistically significant differences detected between the main survey and follow-up respondents in their categorical responses to the patent examination questions for either Wave 6 or 7.

- There are fairly large relative differences in both waves. These differences are not detectable due to the large standard errors of the estimates from the follow-up study. The responses were generally more positive for the follow-up.

- For the average responses, the overall averages were not significant.

- There are only a few significant differences by characteristic while controlling the overall false discovery rate using the B-H approach. It is expected that 10% of the difference would be significant by chance. In Wave 6, only one of the fifteen differences tested (6.7%) was significant, the sample domain for firms with less than 150 applications. In Wave 7, two of the fifteen differences tested (13.3%) were significant, agents and other registration numbers (those recently registered).

- In regards to postcard type, there were significant differences between the different colors for response rates and categorical responses only in Wave 7. The response rate was higher for the white postcard as was the proportion of the fair category. The direction of the differences was not consistent in Wave 6.

- For the average responses by postcard type, the overall averages were not significant. There was only one significant difference (6.7%) by characteristic, firms with registration numbers between 44155 and 50724, in Wave 7.

Westat will continue to conduct non-response analysis as necessary to evaluate the potential for bias.

4. Testing of Procedures

To ensure the survey questions are meaningful to respondents and easy to understand, Westat conducted four cognitive interviews with customers identified by the USPTO. These customers are similar to the sampled respondents for the Customer Panel Quality Survey study. The wording of the survey questions was then revised based on feedback from these customers.

Low response rates have typically been observed in previous customer surveys administered by the USPTO. The USPTO believes that offering both a paper and a web response option will enhance response rates for this effort. The Customer Panel Quality Survey was designed to focus only on key aspects of examination quality to keep the time burden to a minimum and to help response rates.

When sending the mail survey out to sampled customers, we will use the well-established procedures documented by Dillman (2002). After the online version of the survey is programmed, Westat will test the web survey internally to ensure respondents' answers are properly captured and the survey is easy to navigate online. Westat will also ensure that all computer security requirements are met.

5. Contact for Statistical Aspects and Data Collection

The Office of Patent Quality Assurance of the USPTO is responsible for conducting the Customer Panel Quality Survey. Martin Rater is the point of contact for this survey and can be reached by phone at 571-272-5966 or by e-mail at martin.rater@uspto.gov. The names and telephone numbers for the individuals from Westat who consulted on the statistical aspects of the survey and who are conducting the survey under the direction of the USPTO are:

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List of References

A. USPTO Customer Panel Quality Survey Sampling Plan
B. PTO Wave 6/7 Nonresponse Follow-Up Report and CPQS: Summary of the Nonresponse Followup Analysis