**Introduction**
- Survey methods have been used to determine consumer knowledge, perceptions, attitudes and opinions.
- There are increasing number of survey research companies that have reward programs to attract consumers to take surveys.
- Rewards may increase response rate, but may not improve survey quality if the motivation to take survey is solely for the rewards.
- Actions should be taken to improve survey data quality by identifying respondents who are not serious in answering survey questions.

**Objectives**
- Present a method using validation questions to identify respondents who are careless in answering survey questions.
- Determine whether there is a significant difference in demographics between respondents who pass the validation question and those do not pass.
- Determine whether the answers of respondents who do not pass validation questions are FOCs with respect to the non-response rate.

**Methods**
- Respondents’ efforts in answering survey questions: \( E^* = E(R,I), \frac{\partial E}{\partial R} > 0 \text{ and } \frac{\partial E}{\partial I} > 0 \), where \( R \) is the social award of taking the survey and \( I \) is the monetary incentive for answering the survey.
- Researchers’ objectives: \( \max a \cdot \text{Rate} + \beta \cdot \text{Rqua} \), where
  - \( \text{Rate} = f(R,I) \) is the response rate, and \( \text{Rqua} = g(R,I,E(R,I)) \) is the data quality.
  - FOCs with respect to \( R \) and \( I \) determine the optimal social reward and incentive to maximize the sum of response rate and data quality.
- FOC: \( \frac{\partial E}{\partial R} \cdot \frac{\partial R}{\partial R} + \frac{\partial E}{\partial I} \cdot \frac{\partial I}{\partial R} \Rightarrow \frac{\partial E}{\partial R} \cdot \frac{\partial R}{\partial R} \cdot \frac{\partial R}{\partial E} = \frac{\partial E}{\partial I} \cdot \frac{\partial I}{\partial R} \cdot \frac{\partial I}{\partial E} \)
- The larger the impact of incentives on effort, \( E_i \), the lower the marginal effect of incentives on data quality.
- Hypothesis
- Survey Design
  - A survey was designed to study consumer preferences for seafood and meats.
  - A validation question was added in the middle of the survey to ask respondent to select a specific answer.
  - Demographic and choice experiment questions were also included.
- Data Collection
  - 2011, online survey was sent to 3,475 respondents
  - Respondents must be the parents of at least one child between 6-16 years, seafood consumers, in a household with no members being allergic to seafood, and not working in fishing industry.

**Results**
- About 92% qualified respondents passed the validation question
- There is no significant difference in the non-response rate to demographic questions between the respondents who passed and didn’t pass the validation question.
- Respondents who didn’t pass the validation question tend to be younger, less likely to be Caucasians, less educated and with lower income.
- All other demographics being controlled, income and education level significantly affect the probability of a respondent passing the validation question.
- Overall, there are significant differences in the marginal WTP between respondents passing and not passing validation question.
- Using validation question may be a good instrument to detect careless respondents in the survey and improve data quality.

**Conclusions and Discussion**
- Hypothesis: Higher Income, Higher Data Quality
- Survey Design: Higher Education, Higher Data Quality

**Figure 1.** Different Types of Respondents

**Figure 2.** Non-Response to Demographic Questions

**Figure 3.** Marginal WTP for Seafood and Meat over WTP for Pork of Respondents who Passed and didn’t Pass the Validation Question

**Figure 4.** Marginal Effect of Demographics on Validation Question

**Figure 5.** Marginal Effect of Demographics on Validation Question

**Figure 6.** Marginal Effect of Demographics on Validation Question

**Figure 7.** Marginal Effect of Demographics on Validation Question

**Figure 8.** Marginal Effect of Demographics on Validation Question

**Figure 9.** Marginal Effect of Demographics on Validation Question