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# Understanding “Frequent Survey Responders” on Online Panels



By **Healey C. Whitsett**, MS

## Background

As time and technology have progressed, so have the means by which surveys are conducted. The earliest mode of survey data collection was the in-person interview, followed later by postal mail and telephone interviewing.<sup>1</sup> Now, over two-thirds of the American population has Internet access,<sup>2</sup> and this has contributed to the Internet survey—also known as the Web or online survey—rapidly gaining popularity in the research community.

To illustrate, *Inside Research* estimates that between 1996 and 2006, the total amount spent in the United States on online marketing research jumped from \$4 million to \$1.2 billion dollars—a thirty-fold increase.<sup>3</sup> By 2009, this total had further increased to nearly \$2 billion. The Internet is likely to remain a major mode of conducting survey research because it offers cost and time efficiencies over other methods of data collection.

Internet surveys are not only growing in popularity in the market research industry, but in the legal industry as well. Since the late 2000s, the use of these surveys has become common in various types of legal proceedings. For example, the National Advertising Division<sup>4</sup> (NAD) and the Trademark Trial and Appeal Board<sup>5</sup> (TTAB) have both accepted Internet surveys. Indeed, Internet surveys have also been accepted by a number of District Courts.<sup>6</sup>

However, Internet surveys face several challenges. For instance, because there is no comprehensive list of the 71 percent of Americans who have Internet access at home,<sup>7</sup> researchers must somehow find an alternate means of constructing sampling frames, or lists of individuals to sample for a given survey, for their studies. The most common solution to this problem is using an “online panel” of respondents that a research company has recruited. Generally speaking, an online panel is “[a] sample database of potential respondents who declare that they will cooperate with future [online] data collection.”<sup>8,9</sup>

One potential issue stemming from the use of online panels is “frequent survey responders”<sup>10</sup> (FSRs) who belong to online panels. As the name suggests, these are respondents who take more surveys, on average, than does the average online panel member. Though industry and academic researchers have conducted research on these respondents, no formal attempt has been made to integrate their findings—that is the objective of this paper.

In this paper, I conduct a systematic review of the literature describing research that has been done on frequent survey responders—in total, this review considers 16 publications (Table 1). The majority, or 13, of these publications were either presented at conferences (10 publications) or were put out by online panel companies as “research-on-research” pieces or white papers (three publications). The remaining three articles were published in peer-reviewed journals. To begin this review, I explain the reasons why researchers are concerned about FSRs. I next define FSRs and explore four different questions. The first two questions relate to (1) how FSRs are defined in the literature, and (2) their demographic characteristics. I also evaluate the evidence to determine (3) whether FSRs’ reports of attitudes and/or behaviors differ from those of respondents who take surveys less frequently, and (4) what impact, if any, FSRs’ responses have on data quality.

Table 1. **Primary Research Articles Included in Review**

Count	Research-on-Research
1	Clinton, J. (2001). <i>Panel Bias from Attrition and Conditioning: A Case Study of the Knowledge Networks Panel</i> . Montreal, Canada.
2	Frede, Susan, Lee Markowitz, and Pete Coffey. (2006). <i>Heavier Responders in Online Survey Research: Professional Panel Management Matters</i> .
3	Huggins, V. & Eyerman, J. (2001). <i>Probability Based Internet Surveys: A Synopsis Of Early Methods and Survey Research Results</i> . Presented at the Research Conference of the Federal Committee on Statistical Methodology (FCSM), Arlington, VA.
Journal Articles	
4	Cape, Peter. (2008). ASC Conference - Multiple Panel Members: Saints or Sinners? <i>International Journal of Market Research</i> 50(5): 702–704.
5	Chang, L. & Krosnick, J. (2009). National Surveys via RDD Telephone Interviewing Versus the Internet: Comparing Sample Representativeness and Response Quality. <i>Public Opinion Quarterly</i> 73(4), 641–678.
6	Walker, R., Pettit, R., & Rubinson, J. (2009). A Special Report from the Foundations of Quality Initiative: A Five-part Immersion into the Quality of Online Research. <i>Journal of Advertising Research</i> , 464–485.
Count	Conference Proceedings
7	Binswanger, J. & Schunk, D. (2008). <i>Does Experience and Sample Attrition Affect Response Behavior in Panels?</i> Presented at the MESS Workshop, Tilburg, The Netherlands. Retrieved from: <a href="http://www.centerdata.nl/export/sites/CentERdata/en/TopMenu/Projecten/MESS/Binswanger-2008-MESS_workshop-presentation.pdf">http://www.centerdata.nl/export/sites/CentERdata/en/TopMenu/Projecten/MESS/Binswanger-2008-MESS_workshop-presentation.pdf</a> .

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Count	Conference Proceedings ( <i>continued</i> )
8	Casdas, D., Fine, B., & Menictas, C. (2006). Attitudinal Differences - Comparing People Who Belong to Multiple Vs. Single Panels. <i>Panel Research</i> . Barcelona, Spain: ESOMAR.
9	Coen, T., Lorch, J., & Piekarski, L. (2005). The Effects of Survey Frequency on Panelists' Responses. <i>Worldwide Panel Research Conference</i> . Budapest, Hungary: ESOMAR.
10	Conrad, F. G., Tourangeau, R., Couper, M. P., & Zhang, C. (2010). <i>Professional Web Respondents and Data Quality</i> . Presented at The American Association for Public Opinion Research (AAPOR), Chicago, IL.
11	de Wulf, K. & Berteloot, S. (2007). Duplication and Multisource Panel Recruitment: Real Quality Differences or Idle Rumours? <i>Panel Research</i> . Orlando, FL: ESOMAR.
12	Fulgoni, G. (2005). <i>The 'Professional Respondent' Problem in Online Survey Panels Today</i> . Presented at the Marketing Research Association Annual Conference, Chicago, IL.
13	Keusch, F. (2011). <i>The Influence of Personality Traits and Motives for Joining on Participation Behavior in Online Panels</i> . Presented at the General Online Research (GOR) Conference, Dusseldorf, Germany.
14	Pineau, V., Nukulkij, P., & Tang, X. (2005) Assessing Panel Bias in the Knowledge Networks Panel: Updated Results from 2005 Research. <i>Survey Research Methods Section (3480–3486)</i> . Minneapolis, MN: American Statistical Association.
15	Smith, R. & Hofma Brown, H. (2006). Panel and Data Quality: Comparing Metrics and Assessing Claims. <i>Panel Research</i> . Barcelona, Spain: ESOMAR.
16	Vonk, T., van Ossenbruggen, R., & Willems, P. (2006). The Effects of Panel Recruitment and Management on Research Results: A Study Across 19 Online Panels. <i>Panel Research</i> . Barcelona, Spain: ESOMAR.

## Researchers' Concerns About FSRs

It is clear that there is concern about the presence of FSRs in online panel data because the online research industry has taken measures to limit their participation in studies. For example, Harris Interactive notes that for its studies, “[s]tratifcation by prior survey participation is superimposed behind the scenes for every stratified sample pull”<sup>11</sup> so that FSRs are not over-represented in their clients’ data. GfK’s KnowledgePanel takes care “not to assign more than six surveys per month to panel members” because “[f]requency of survey participation might increase conditioning effects.”<sup>12</sup> Likewise, Nielsen notes that its panel members “are limited to completing a few surveys per month...to discourage professional respondents from joining the panel.”<sup>13</sup>

Researchers in the industry have two main concerns about FSRs. The first is that frequent participation in surveys will influence the way that respondents answer future surveys, such that their future answers will differ systematically from those of less-frequent survey takers. As Michael Dennis puts it, “[t]he intuition is that...panelists’ self-reported attitude and behaviors are changed over time by their regular participation in surveys.”<sup>14</sup>

This sentiment is comparable to concerns about “panel conditioning” in traditional longitudinal surveys such as the Consumer Expenditure Survey. In longitudinal surveys, panels of respondents are interviewed on multiple occasions using the same survey instrument over a period of time. The concern is that the act of participating in the same survey on multiple occasions will have an impact on what the researcher is measuring.<sup>15</sup> That is, the act of being interviewed may change the respondents’ answers to future interviews.

The concern with FSRs, however, is not that taking the *same* survey on multiple occasions will have an impact on their responding behavior, but that taking numerous *different* surveys may somehow alter the way they respond. If the act of repeated online survey-taking somehow changes the respondents’ reporting patterns, FSRs’ presence on online panels could create substantive biases in survey results. This is particularly true given that FSRs have a higher response propensity than other panelists.

The second concern that researchers have about FSRs is that they are “bad” respondents who are motivated by incentives and will lie, cheat, and/or rush through surveys in order to obtain rewards. The Interactive Marketing Research Organization (IMRO) hints at this view in its “Professional Standards for Online Research” when it warns that:

Response rates and data quality may suffer if panelists are ‘over-surveyed.’ Likewise, a panel’s reputation for providing an abundance of survey opportunities could attract panelists whose primary motivation is financial incentives.<sup>16</sup>

This type of survey-taking behavior is potentially problematic since it could introduce measurement error into the survey data that may substantively alter the researcher’s conclusions about the study.

## How Do Researchers Define FSRs?

In order to assess these concerns about FSRs, we need to evaluate how they are defined. As mentioned above, FSRs are respondents on online panels who are more “active,” on average, than are other panelists. In the literature, researchers use a number of phrases to refer to these respondents. These range from “professional respondents,”<sup>17</sup> and “hyperactive respondents,”<sup>18</sup> to “heavy responders,”<sup>19</sup> “trained respondents,”<sup>20</sup> and “professional panel participants.”<sup>21</sup> In this paper, I use Coen et al.’s terminology<sup>22</sup> and refer to these respondents as “frequent survey responders” because this phrase communicates information about the frequency of survey response without suggesting anything about the nature of panelists’ responding behavior (i.e., whether they are “good” or “bad” respondents).

Researchers operationalize FSRs’ heightened level of survey-taking activity in three different ways using either respondent self-reports or internal panel provider data. These are:

1. the number of online panels to which the respondent belongs;
2. the number of surveys the respondent has taken over some designated period of time (e.g., over the past six months or year); and

3. the length of time that the respondent has belonged to a particular panel, or “panel tenure.”

Of the 16 articles I included in this review, nine defined FSRs using the first definition, six used the second, and four used the third. There were three articles that used more than one definition.

Within each of these three categories, researchers use different definitions to characterize respondents as FSRs. I present these varying definitions in Tables 2-4. In Table 2, we see that more than half, or five out of nine, of the studies defining FSRs by the number of panels do not specify the number of panels that it would take to qualify as a “multiple panel member.” Of the remaining four studies, two define multiple panel members as belonging to two or more panels and the remainder use varying definitions. Tables 3 and 4 illustrate that the definitions employed by researchers are similarly ambiguous and inconsistent for research defining FSRs by the number of surveys they have taken (Table 3) or the length of their panel tenure (Table 4).

This ambiguity creates a problem. Because there are three different ways that researchers operationalize FSRs and various definitions of FSRs within each of the three categories, it is not possible to make true “apples-to-apples” comparisons between the available studies. With this limitation in mind, I will use this review to integrate the findings of these studies to the extent that it is possible and sensible.

**Table 2. Examples of Definitions of Frequent Survey Responders, Number of Panels to which Respondents Belong**

Article	Definition
Cape	Members of multiple panels, unspecified number
Fulgoni	Members of multiple panels, unspecified number
Smith & Hofma-Brown	Members of multiple panels, unspecified number
Vonk et al.	Members of multiple panels, unspecified number
Walker et al.	Members of multiple panels, unspecified number
Casdas et al.	9 or more panels*
Conrad et al.	7 or more panels*
de Wulf & Berteloot	2+ panels
Keusch	2+ panels

Notes:

\* The authors look at trends by varying levels of panel membership. In this table, I have listed the most “extreme” value, or grouping of the highest number of panels to which respondents belong.

**Table 3. Examples of Definitions of Frequent Survey Responders, Number of Surveys Taken over Different Time Periods**

Article	Number of Surveys	Time Period
Chang & Krosnick	Unspecified Unspecified	Past 3 months Duration of panel tenure
Coen et al. (Study 1)	4 or more	Past 10 days
Coen et al. (Study 2)	20 or more	Unspecified
Frede et al.	10 or more	Past 30 days
Fulgoni	Unspecified	Unspecified
Smith & Hofma-Brown	Unspecified	Unspecified
Vonk	Unspecified	Unspecified

Notes:

In these studies, frequent survey responders are defined by the combination of number of surveys taken over the designated time period. In several cases, the authors failed to specify the time period or number of surveys; in others, they specified neither.

**Table 4. Examples of Definitions of Frequent Survey Responders, Panel Tenure**

Article	Definition
Binswanger & Schunk	Average 4 years
Clinton	7 months*
Huggins & Eyerman	12+ months*
Pineau et al.	37+ months*

Notes:

\* The authors look at trends by varying levels of panel tenure. In this table, I have listed the most “extreme” value, or grouping of the highest level of panel tenure.

## What are the Demographic Characteristics of FSRs?

One of the first necessary steps in learning about FSRs is developing a working understanding of the type(s) of people that they are likely to be. The first set of questions that I will address in this literature review is therefore: Who are FSRs? Are their demographic characteristics comparable to the full population of online panel members?

Of the 16 studies included in this review, nine described the demographic characteristics of FSRs,<sup>23</sup> and there was some convergence in the findings (Table 5). FSRs were likely to be less well educated, have lower incomes, and were less likely to be fully employed (i.e., either un- or under-employed) than other panel members. These findings are logically consistent in that these three characteristics are likely to be correlated with one another. In addition, individuals with these characteristics may also have more time, less money, and therefore the incentive to complete surveys online.

Table 5. **Demographic Characteristics of Frequent Survey Responders**

Article	Education	Income	Employment	Gender	Age	Misc
Casdas et al.	Lower	—	FT less likely	Female	Younger	Renters
Coen et al.	—	Higher income	PT more likely	—	—	African American or Hispanic
de Wulf & Berteloot	No difference	No difference	Unemployed more likely	—	—	—
Frede et al.	Lower	Lower income	—	Male	—	Smaller households
Fulgoni	Lower	—	FT less likely	—	—	—
Huggins & Eyerman	No difference	No difference	—	No difference	No difference	—
Keusch	—	—	—	Female	—	—
Smith & Hofma-Brown	Lower	Lower income	FT less likely	Female	Older	Less likely to be single
Vonk	Lower	Lower income	FT less likely	Female	Younger	—

Despite this convergence, these studies also report some idiosyncratic findings. For example, while some studies say that FSRs are more likely to be female, another notes that they are more likely to be male. Contrary to the trends noted above, one study says that they are likely to have higher incomes, and another notes that they are more likely to be African American or Hispanic.

These differences are likely attributable to the studies being done using different panels, since the demographic characteristics of each panel likely vary. As shown in Table 6, there were at least<sup>24</sup> 18 different panels used in the 16 studies reviewed; across studies describing FSRs’ demographic characteristics, at least 12 panels were used. To the extent that the demographic composition of panels varies, so, too, might reports about the demographic characteristics of FSRs.

Though some convergence in the findings exists, it is quite unclear exactly who these respondents are and it is likely that the answer varies from panel to panel. The available literature suggests they are likely to have lower education, income, and employment levels than less frequent responders, suggesting that FSRs therefore have more time and less money than other panel members.

Table 6. **Panel(s) Used in Each Study**

Article	Panel(s)	Panel Country of Origin
Binswanger & Schunk	CentER Panel LISSpanel	The Netherlands The Netherlands
Cape	Survey Sampling Int'l. ("SSI")	Various, Undisclosed*
Casdas et al.	AMR Interactive	Australia
Chang & Krosnick	Harris Interactive Knowledge Networks	United States United States
Clinton	Knowledge Networks	United States
Coen et al.	SSI's SurveySpot Panel Proprietary, Undisclosed**	United States United States
Conrad et al.	SSI's SurveySpot Panel Authentic Response	United States United States***
de Wulf & Berteloot	XL Online Panel	Belgium
Frede et al.	Ipsos NPD Group TNS	United States**** United States**** United States****
Fulgoni	comScore Networks	United States
Huggins & Eyerman	Knowledge Networks	United States
Keusch	Opinions Online	European, Undisclosed
Pineau et al.	Knowledge Networks	United States
Smith & Hofma-Brown	Harris Interactive Net Observer	United States United Kingdom
Vonk	Various, Undisclosed	The Netherlands
Walker	Various, Undisclosed	United States

Notes:

- \* The article mentions that SSI has panels in various countries including the UK, France, Germany, the Netherlands, and Australia.
- \*\* The panel utilized is a proprietary panel at a "large, US based consumer packaged goods firm in the food and beverage sector."
- \*\*\* Authentic Response has international panels, but since the researchers used SSI's SurveySpot US panel I assumed they used the Authentic Response US panel as well.
- \*\*\*\* I assumed that all three of the panels utilized in this study were the companies' US panels.

## Do FSRs Respond Differently than Other Respondents?

As noted above, one of researchers' concerns about FSRs is that if repeated online survey-taking somehow changes respondents' reporting patterns, FSRs' presence on online panels could create substantive biases in survey results. However, it can be argued that repeated survey-taking improves respondents' performance on surveys such that FSRs may be "biased" towards reporting higher-quality data. Either way, researchers face the threat of FSRs responding differently to attitudinal and behavioral questions as a result of their taking more surveys than other panelists. In this section, I evaluate the evidence to determine whether or not this is a legitimate concern.

### FSRs and Consuming-Related Attitudes and Behaviors

First, one group of findings shows that frequent survey responders are likely to provide lower intent-to-purchase ratings for products than are other respondents—Coen et al.,<sup>25</sup> Frede et al.,<sup>26</sup> and Huggins & Eyerman<sup>27</sup> each report findings to this end. In addition, Walker et al.<sup>28</sup> report similar findings illustrating that respondents who belong to multiple panels are less likely to provide high ratings for a "new product concept." Coen et al. offer a description of this trend:

Intent-to-Buy scores are frequently over-inflated in consumer survey research, but...the very experienced panelists have scores that are not as over-inflated. So scores from experienced panelists appear to be more in line with the actual behavior that may be expected in the real world.<sup>29</sup>

Thus, FSRs may react more realistically when presented with stimuli of products and/or services than do less frequent survey takers.

Another aspect of consumer-related behavior described in these studies is respondents' awareness of different brands. The findings here are mixed. Researchers have sometimes found that FSRs are more likely to report awareness of a stimulus brand, such as a certain brand of beverage (Pineau et al.<sup>30</sup>) or new food product (Coen et al.<sup>31</sup>). However, researchers also have found that FSRs may be less likely to do so—for instance, in the same study where Pineau et al. found that FSRs were more likely to be aware of one beverage brand, the researchers found they were simultaneously less likely to be aware of another (Pineau et al.<sup>32</sup>). These findings are likely driven by what brand respondents are asked about, and the studies therefore come to mixed conclusions. However, the results weigh slightly in favor of the notion that FSRs may differ from other respondents in terms of their likelihood of brand recognition.

Finally, Fulgoni's<sup>33</sup> study on consumer packaged goods provides clues as to how FSRs may differ from other respondents on various types of consuming attitudes and behaviors. Some examples that he provides are that FSRs are (1) significantly more likely to be influenced by advertising, (2) significantly more likely to use coupons when they shop, (3) significantly more likely to think that brand names are important, and (4) not as likely to consider themselves impulse shoppers.

Researchers conducting surveys involving consumer goods and services should note these findings. It is clear that insufficient evidence has been gathered to demonstrate that FSRs do indeed differ systematically from other respondents in terms of their consumption-related attitudes and behaviors. More research on this topic is needed.

## Other Characteristics

In addition to the consumption-related concerns that I have described above, researchers have reported other differences in the way that FSRs respond to certain survey questions as compared to other respondents. Many of these findings are idiosyncratic and unique to the study at hand.

First, a number of the articles in this review have studied media consumption and Internet usage to determine whether FSRs differ from less frequent survey-takers. Their findings, however, are inconsistent. While one study found that FSRs consume media such as the news, radio, and newspapers, more frequently than other respondents,<sup>34</sup> two others came to the opposite conclusion.<sup>35</sup> A number of studies report that FSRs are heavier Internet users than are other respondents,<sup>36</sup> but again one came to the opposite conclusion.<sup>37</sup> We therefore cannot know definitively whether or not FSRs consume more media and use the Web more often than others do.

The remaining findings on how FSRs differ from other respondents in terms of their responding behaviors are idiosyncratic to each study. As shown in Table 7, there are a variety of attitudinal and behavioral topics that FSRs are both more and less likely than other respondents to report. While this suggests that FSRs may indeed be different from other respondents in some areas, the magnitude of the differences found was oftentimes quite small. Moreover, there are also a number of attitudes and behaviors for which researchers found no difference between FSRs and other respondents (Table 8).

Table 7. **Research Indicating Differences between FSRs and non-FSRs**

Article	Likelihood for FSRs, Compared to non-FSRs	
	More Likely To...	Less Likely To...
Casdas et al.	Smoke Read magazines Own pets and have more of them Have high-end technology*	Have a car Have private insurance Own shares of stock Drink wine
Clinton		Daily news consumption
Fulgoni	Shop at grocery stores Use coupons Value brand-names	Shop at warehouse/club stores
Huggins	n/a	Answer sensitive questions about AIDS
Pineau et al.	Be aware of beverage brand 1**	Have allergies Have migranes Play Internet poker Donate to charity Consume Coca-Cola Shop at CVS Read USA Today Be aware of beverage brand 2**
Vonk	n/a	Be satisfied with income Be satisfied with how democracy is functioning Feel healthy

Notes:

\* "High-end technology" includes DVDs, high speed internet, and web cams.

\*\* Beverage brands were not disclosed in the study.

Table 8. **Research Indicating no Difference between FSRs and non-FSRs**

Article	Characteristic
Binswanger	Time and risk preferences as related to retirement preparation.
Clinton	Interest in politics and public affairs Opinion about George W. Bush Opinion about Al Gore Planning to vote in upcoming election
Fulgoni	Amount of time spent grocery shopping Amount of money spent grocery shopping Using a list for groceries Having a grocery budget Likelihood of voting in past election Rate self in terms of different characteristics (e.g., politically active, spiritual, creative, organized) Engage in activities (e.g., exercise, going to movies, reading books)
Huggins	Opinions about hybrid electric cars Personal finance behaviors

### Summary

Many of the studies included in this review have made some attempt to describe attitudinal and/or behavioral differences between FSRs and other respondents. While FSRs may indeed have different consumption attitudes and behaviors than less frequent survey responders, the results are in some ways contradictory and researchers would be wise to investigate this further.

The data are even less clear with regard to other types of attitudinal and behavioral questions. It is currently impossible to predict (1) the circumstances under which FSRs will respond differently than other respondents, and (2) for which topics these differences may appear. For some topics, researchers found differences, but it is important to note that in these cases the differences were small in magnitude. In other cases, no differences were found.

Furthermore, to the extent that these studies have found differences between the responses of FSRs and other respondents, the cause of those differences is unclear. For example, are FSRs different from other respondents because they have more time and less money than other respondents, as suggested in the demographic findings above? Or, is it the act of taking numerous surveys that creates biases in FSRs' reported results?

Overall, it is clear that further research is necessary to determine when and for what types of questions we should expect to see differences in response distributions between FSRs and other respondents. In the meantime, researchers conducting surveys may wish to be cautious by limiting the number of FSRs in their study populations.

## Do FSRs' Responses Have an Impact on Data Quality?

Data quality, generally speaking, refers to the reliability and validity of data collected using an online survey. For survey data to be reliable, they must be an accurate measure of the respondents' characteristics; for the data to be valid, they must be measuring what the researcher intends to measure. Online panels try to protect the quality of their data by eliminating fraudulent respondents, duplicate respondents, and generating measures of respondent engagement.<sup>38</sup>

Along these lines, researchers are also concerned that FSRs are “bad” respondents—that is, they are more likely to lie, cheat, or rush their way through surveys. This behavior, in turn, could potentially lessen the quality of data obtained from FSRs. It is also quite possible, however, that having practice taking numerous surveys improves the quality of data reported by FSRs. In this section, I review the evidence related to FSRs and several aspects of data quality including respondent satisficing and two specific types of satisficing, speeding and “straightlining,” to determine how seriously researchers should take concerns about FSRs lessening the quality of their data.

### Satisficing

One behavior that survey methodologists want respondents to avoid is survey satisficing, or “respondents...seek[ing] out ways to avoid doing...work while still appearing as if they are carrying on a survey interview or completing a questionnaire appropriately.”<sup>39</sup> There are many ways in which respondents might satisfice. A few examples include selecting the “don't know” or “no opinion” option when they actually have an opinion, or providing an incomplete answer in response to an open-ended question.

Several of the studies included in this review assess the issue of satisficing as it relates to FSRs, and they have generally found that FSRs are no more likely to engage in satisficing behavior than are other panel members. Binswanger and Schunk, for instance, found that there was no significant difference in the amount of item non-response between “experienced” and “novice” panel members.<sup>40</sup> Along these same lines, Smith and Hofma-Brown found that “hyperactive” respondents were more likely to respond to sensitive questions about income and asset levels, resulting in lower item nonresponse than less active respondents.<sup>41</sup> “Hyperactive” respondents were also equally likely as less frequent responders to provide answers to open-ended questions. Conrad et al., on the other hand, found that multiple panel members were more likely to use the “other” category, which the researchers hypothesize is an example of satisficing behavior.<sup>42</sup>

The evidence therefore suggests that FSRs are no more or less likely to engage in satisficing behavior than their peers who take fewer surveys. Below, I will synthesize the research findings on two specific types of satisficing behavior—speeding and straightlining—and report on other findings related generally to the issue of FSRs and data quality.

### Speeding

Another problematic behavior that some panelists engage in is “speeding,” or rushing through the questionnaire. Speeding is a concern because it suggests that the respondent is not answering the survey in a thoughtful manner. If one accepts the hypothesis that FSRs are interested only in taking as many surveys as possible, it follows that FSRs may be more likely to engage in speeding behavior in order to meet this goal.

Three studies included in this review include discussion of research findings related to FSRs and speeding. Cape found that members of only one panel were more likely to speed than FSRs belonging to multiple panels.<sup>43</sup> In addition, although Frede et al. found that FSRs took less time completing the survey, the authors note that FSRs took more time completing a portion of the survey about their survey-taking behaviors, which suggested that they were indeed providing thoughtful answers.<sup>44</sup> Similarly, Coen et al. determined that FSRs were slightly more likely to complete the survey faster than other respondents, but that their data quality did not suffer as a result.<sup>45</sup> Taken together, these findings suggest that FSRs are no more likely to “speed” than other respondents, and when they do speed, their behavior may be explained by Coen et al.’s hypothesis that FSRs have become “better” at taking surveys and therefore “faster” at it, too.<sup>46</sup>

The literature does not present any compelling evidence that FSRs are more likely to speed through a survey than are other respondents. Though speeding through a survey is oftentimes taken as a signal of a respondent’s inattentiveness, these results suggest that if and when FSRs do move through a survey faster than other respondents, it is because they have become more adept at taking online surveys. Until further research investigating this issue has been completed, researchers should be cautious not to conflate fast survey-taking time with respondent inattentiveness.

### **Straightlining**

Some researchers are also concerned that respondents who take more surveys than others are more likely to engage in “inattentive” behaviors such as “straightlining.” Straightlining occurs when a respondent is presented with a grid of response options and chooses the same answer—for instance, “yes” or “no”—for all of the items, therefore creating a straight line with his or her answer choices.<sup>47</sup> Some researchers attribute this behavior to respondents who are (a) not paying sufficient attention to their answer choices, or (b) trying to speed through the survey, as described above.

The available literature, however, does not support the hypothesis that FSRs are more likely to engage in straightlining. Cape, for example, found that measures of straightlining do not increase with the number of panels to which respondents belong.<sup>48</sup> Similarly, Smith and Hofma-Brown’s research determined that FSRs were equally likely to engage in straightlining as less frequent responders.<sup>49</sup>

While straightlining is a responding behavior that survey researchers should be sure to watch for, the available literature suggests that this behavior is no more likely to occur with FSRs than with other online panel members. Until further research proves otherwise, researchers conducting online surveys need not take special measures to target this behavior in FSRs.

### **Other Data Quality Issues**

Several of the studies included in this review provide other valuable information about the quality of data provided by FSRs. First are three studies that give us insight into general issues of data quality. Vonk, for example, found that data obtained from “professional respondents” is of average quality compared to other groups of respondents, such as inattentive respondents, who rated “below average” on data quality measures.<sup>50</sup> de Wulf and Berteloot’s study indicates that FSRs were more likely to agree with statements indicating that they believe they give high-quality responses to surveys.<sup>51</sup> And Walker et al. note generally that “being a member of multiple panels actually lowers the odds of bad behavior occurring by as much as 32 percent.”<sup>52</sup>

In addition, other studies indicate that FSRs yield higher-quality data than other respondents. To illustrate, Cape found that when comparing the answers of FSRs to population figures, their response distributions were actually closer to these totals than they were for other, less frequent responders.<sup>53</sup> Conrad et al. found evidence that FSRs were more likely to use features of the survey that were meant to help respondents achieve a higher quality of response.<sup>54</sup> And indeed, in a classic paper on Internet surveys, Chang and Krosnick found that “survey respondents provide more accurate reports after gaining practice by completing questionnaires.”<sup>55</sup>

Though some researchers worry that FSRs provide poorer-quality data than do other respondents, these findings suggest that this worry is unfounded. Indeed, if anything, one might argue that these findings suggest that FSRs provide higher-quality data than do other respondents. More research is needed to settle the issue.

### **Summary**

In sum, it seems clear that FSRs do not have a detrimental impact on the quality of online survey data. Indeed, in some of the studies, FSRs provided higher-quality data than other respondents. Researchers should avoid the temptation of equating FSRs with other types of “undesirable” respondents such as speeders and cheaters—FSRs should be viewed as their own group with their own unique behaviors. Researchers should still be sure to take necessary precautions to guard against “bad” respondent behaviors, irrespective of whether these behaviors are committed by FSRs.

### **Discussion**

This review has addressed four questions: (1) How are FSRs defined in the literature?; (2) What are their demographic characteristics?; (3) Do their reports of attitudes/behaviors differ from less frequent responders?; and (4) Do they have an impact on data quality?

This literature review has provided clear answers to Questions (1) and (4). With regard to Question (1), we have learned that FSRs are defined in one of three different ways in the literature: by panel tenure, the number of surveys taken, and/or the number of panels to which a respondent belongs. In addition, it seems clear that FSRs do not have a detrimental impact on data quality and in some instances may even supply researchers with higher-quality data than less frequent responders (Question 4).

Unfortunately, the answers to Questions (2) and (3) are murky. Though this review will hopefully point future research in the right direction, for this reason it has also, in some ways, left us with more questions than answers. For instance, though the literature on FSRs’ demographic characteristics converges in some regards, it is contradictory in others. Essentially, we still lack a solid understanding of who these respondents are. The same is true in terms of FSRs’ response propensity for attitudinal and behavioral questions.

This review is also not without limitations. For instance, it is not clear whether the differences in findings across the studies are attributable to differences in the panels that each researcher used. Similarly, it is possible that the mixed findings reported here are a result of (1) the various definitions of FSR that are employed by researchers (Tables 2-4), and/or (2) the variability in

the topics that the surveys are about (Tables 7-8). In addition, these studies are, taken together, quite dated (see Table 1) – it appears that researchers have not been publishing on the topic of FSRs as of late.

Table 9 provides an overview of the 16 articles included in this review and their findings with regard to FSR demographics, data quality, attitudes, and behaviors.

**Table 9. Summary of 16 Articles Included in FSR Literature Review**  
Are FSRs Different from Other Respondents?

Article	Year	FSR Definition(s)	FSR Demographic Characteristics	FSR Impact on Data Quality	FSR Impact on Data Quality	
					Attitudes	Behavior
Binswanger & Schunk	2008	Panel Tenure	—	No	No	—
Cape	2008	# Panels	—	Yes - Better	—	—
Casdas et al.	2006	# Panels	Yes	—	—	Yes
Chang & Krosnick	2009	# Surveys	—	Yes - Better	—	—
Clinton	2001	Panel Tenure	—	—	No	Yes
Coen et al.	2005	# Surveys	Yes	No	—	—
Conrad et al.	2010	# Panels	—	Yes - Worse	—	—
de Wulf & Berteloot	2007	# Panels	No	Yes - Better	—	—
Frede et al.	2006	# Surveys	Yes	Yes - Better	—	—
Fulgoni	2005	# Panels; # Surveys	Yes	—	—	Mixed
Huggins & Eyerman	2001	Panel Tenure	No	—	Mixed	No
Keusch	2011	# Panels	Yes	—	—	—
Pineau et al.	2005	Panel Tenure	—	—	—	Yes
Smith & Hofma-Brown	2006	# Panels; # Surveys	Yes	Yes - Better	—	—
Vonk	2006	# Panels; # Surveys	Yes	Yes - Better	Yes	—
Walker	2009	# Panels	—	Yes - Better	—	—

Notes:

This table indicates whether or not FSRs' demographic characteristics, data quality, and substantive responses differ from those of less frequent responders.

## Conclusion

We have learned that in general, FSRs do not have a negative impact on data quality, but that sometimes they may alter substantive response distributions by responding differently than less-frequent responders. Given the evidence presented in this review, should researchers be performing any steps to handle FSRs in online panels?

We have in the past taken certain precautions to avoid potential problems with FSRs. One precaution we have taken, for example, is setting quotas so that the distribution of the numbers of surveys taken by the respondent pool is in equal proportion to the distribution within the panel itself.<sup>56</sup> Another method we have used is to simply analyze the key results by some measure of panel-provided FSR to ensure that those who take more surveys are no different from less-frequent responders. We have used such techniques for between four and seven Web surveys<sup>57</sup> and have found that, in general, there is little difference between the characteristics of FSRs and other respondents to our surveys.

Overall, this literature review has demonstrated that there is a great need for more research on FSRs demographics, attitudes, and behaviors. The available research is sparse and outdated. New research should be specifically designed to gather information on the demographics of FSRs, how their responses might differ from non-FSRs, and how their presence on online panels may have an impact on data quality.

## Notes

- <sup>1</sup> Groves, Robert M., Fowler, Floyd J., Couper, Mick P., Lepkowski, James M., Singer, Eleanor, and Tourangeau, Roger. (2004). *Survey Methodology*. Hoboken, NJ: Wiley-Interscience, p. 7.
- <sup>2</sup> US Department of Commerce. National Telecommunications and Information Administration. 2011. *Household Internet Usage In and Outside of the Home by Selected Characteristics: 2010*. Figure 1: Households with Computers, Telephone Subscriptions, and Internet Access, Selected Years, 1997-2010. [http://www.ntia.doc.gov/files/ntia/publications/ntia\\_internet\\_use\\_report\\_february\\_2011.pdf](http://www.ntia.doc.gov/files/ntia/publications/ntia_internet_use_report_february_2011.pdf).
- <sup>3</sup> Miller, Jeff. (2006). Online Marketing Research. In R. Grover and M. Vriens (Eds.), *The Handbook of Marketing Research* (pp. 110-131). Thousand Oaks, CA: Sage Publications.
- <sup>4</sup> See, e.g.: *H.J. Heinz Company v. ConAgra Foods, Inc.*, Case 4194; *General Mills, Inc. v. Malt-O-Meal Company*, Case 4556.
- <sup>5</sup> See, e.g. *In re Carl Walther GmbH*, No. 77096523, 2010 WL 4502071 (Trademark Tr & Ap. Bd. 2010).
- <sup>6</sup> See, e.g.: *TrafficSchool.com v. EDriver, Inc.*, No. 08-56518, 2011 U.S. App. LEXIS 15536, (9th Cir. 2011); *Brighton Collectibles, Inc. v. RK Texas Leather Mfg.*, No. 10-CV-419-GPC (WVG), 2013 U.S. Dist. LEXIS 19556, (S.D.Cal. 2013); *Louis Vuitton Malletier, S.A. v. Hyundai Motor America*, No. 10 Civ. 1611 (PKC), 2012 US Dist. LEXIS 42795, (S.D.NY. 2012); *Richard Bach v. Forever Living Products US, Inc.*, No. C05-970MJP, 2007 US Dist. LEXIS 8424, (W.D. Wash. 2007).
- <sup>7</sup> US Department of Commerce, *Id.*
- <sup>8</sup> International Organization for Standardization, 2009, as cited by the American Association for Public Opinion Research. 2010. AAPOR Report on Online Panels. Retrieved 19 October 2012 from [http://www.aapor.org/AM/Template.cfm?Section=AAPOR\\_Committee\\_and\\_Task\\_Force\\_Reports&Template=/CM/ContentDisplay.cfm&ContentID=2223](http://www.aapor.org/AM/Template.cfm?Section=AAPOR_Committee_and_Task_Force_Reports&Template=/CM/ContentDisplay.cfm&ContentID=2223), p. 10.
- <sup>9</sup> There are also probability-based online panels that are constructed using an address-based sampling frame to recruit people within households to participate.
- <sup>10</sup> Following Coen et al., I use the terminology "frequent survey responders" throughout this manuscript. See: Coen, Terrence, Jacqueline Lorch, and Linda Piekarski. (2005). "The Effects of Survey Frequency on Panelists' Responses." *ESOMAR Conference Proceedings*.
- <sup>11</sup> Harris Interactive. ESOMAR 26 Questions and Answers. Retrieved 15 November 2012 from [http://www.harrisinteractive.com/vault/HI\\_Corp\\_ESOMAR26\\_QandA.pdf](http://www.harrisinteractive.com/vault/HI_Corp_ESOMAR26_QandA.pdf).
- <sup>12</sup> GfK Knowledge Networks. Response to ESOMAR 26 Questions to Help Research Buyers of Online Samples. Retrieved 15 November 2012 from <http://www.knowledgenetworks.com/insights/docs/Knowledge-Networks-Response-to-ESOMAR-26-Questions.pdf>.
- <sup>13</sup> Nielsen. Nielsen Online Access Panels and ESOMAR Guidelines. Retrieved 15 November 2012 from [http://at.nielsen.com/pubs/documents/ESOMAR\\_26Questions\\_Nielsen.pdf](http://at.nielsen.com/pubs/documents/ESOMAR_26Questions_Nielsen.pdf).
- <sup>14</sup> Dennis, M. J. (2001). "Are Internet panels creating professional respondents?" *Journal of Marketing Research*, 13(2), 34-38, p. 34.
- <sup>15</sup> One of the earliest papers expressing this concern was written by Lazarsfeld in 1940. In this paper, the author notes of panel studies that "the big problem yet unsolved is whether repeated interviews are likely, in themselves, to influence a respondent's opinions." Lazarsfeld, P. J. (1940). 'Panel' Studies. *Public Opinion Quarterly*, 4(1), 122-128, p. 128.
- <sup>16</sup> Interactive Marketing Research Organization. (2006). "IMRO professional standards for online research guidelines and best practices recommendations." Retrieved 24 October 2012 from [http://www.sigmavalidation.com/tips/06\\_09\\_26%20IMRO%20Professional%20Standards%20for%20Online%20Research.pdf](http://www.sigmavalidation.com/tips/06_09_26%20IMRO%20Professional%20Standards%20for%20Online%20Research.pdf), p. 10.
- <sup>17</sup> See for e.g.: Huggins, Vicki, and Joe Eyerman. (2001). "Probability Based Internet Surveys: A Synopsis Of early Methods and Survey Research Results", p. 8.; Smith, Renee, and Holland Hofma-Brown. (2005). "Assessing the Quality of Data from Online Panels: Moving Forward with Confidence", p. 1.
- <sup>18</sup> Trimarchi, Elaine, and Steve Gittelman. (2010). "Growing Pains." *Marketing Research*, p. 24.
- <sup>19</sup> Frede, Susan, Lee Markowitz, and Pete Coffey. (2006). "Heavier Responders in Online Survey Research", p.1.
- <sup>20</sup> Toepoel, Vera, Marcel Das, and Arthur van Soest. (2008). "Effects of Design in Web Surveys: Comparing Trained and Fresh Respondents." *Public Opinion Quarterly* 72, no. 5, p. 1.
- <sup>21</sup> Sparrow, Nick. (2006). "Developing Reliable Online Polls." *International Journal of Marketing Research* 48, no. 6, p. 672.
- <sup>22</sup> Coen et al., *Id.*
- <sup>23</sup> It is important to note that none of the 16 studies included in this review were published with the goal of identifying FSR demographic characteristics.
- <sup>24</sup> I use the phrase "at least" because it is the minimum number of panels that were used across the group of studies included in this review. There were studies that used other unidentified panels which are not included in the totals listed here. Studies that used more than one undisclosed panel are counted only once in these totals.
- <sup>25</sup> Coen et al., *Id.* at p. 9.
- <sup>26</sup> Frede et al, *Id.* at p. 3.
- <sup>27</sup> Huggins & Eyerman, *Id.* at Table 7 (difference not statistically significant).
- <sup>28</sup> Walker, R., Pettit, R., & Rubinson, J. (2009). A Special Report from the Foundations of Quality Initiative: A Five-part Immersion into the Quality of Online Research. *Journal of Advertising Research*, 464-485, p. 479.
- <sup>29</sup> Coen et al, *Id.* at pp. 12-13.
- <sup>30</sup> Pineau, V., Nukulkij, P., & Tang, X. (2005) Assessing Panel Bias in the Knowledge Networks Panel: Updated Results from 2005 Research. *Survey Research Methods Section* (3480-3486). Minneapolis, MN: American Statistical Association, p. 3484, Chart 3.
- <sup>31</sup> Coen et al., *Id.* at p. 9, Table 2.
- <sup>32</sup> Pineau et al., *Id.*
- <sup>33</sup> Fulgoni, G. (2005). *The 'Professional Respondent' Problem in Online Survey Panels Today*. Presented at the Marketing Research Association Annual Conference, Chicago, IL, Slide 13.
- <sup>34</sup> Coen et al., *Id.* at p. 5.
- <sup>35</sup> Smith, R. & Hofma Brown, H. (2006). Panel and Data Quality: Comparing Metrics and Assessing Claims. *Panel Research*. Barcelona, Spain: ESOMAR. at p. 5; Clinton, J. (2001). *Panel Bias from Attrition and Conditioning: A Case Study of the Knowledge Networks Panel*. Montreal, Canada, p. 25.

- <sup>36</sup> de Wulf, K. & Berteloot, S. (2007). Duplication and Multisource Panel Recruitment: Real Quality Differences or Idle Rumours? *Panel Research*. Orlando, FL, pp. 6-7: ESOMAR.; Vonk, T., van Ossenbruggen, R., & Willems, P. (2006). The Effects of Panel Recruitment and Management on Research Results: A Study across 19 Online Panels. *Panel Research*. Barcelona, Spain: ESOMAR, p. 13; Huggins & Eyerman, Id. at Table 8 (with regard to online activities related to personal finance).
- <sup>37</sup> Clinton., Id. at pp. 26-27.
- <sup>38</sup> See, e.g.:AAPOR, Id. at pp. 48-51.
- <sup>39</sup> Krosnick, J. et al (2002). The Impact of "No Opinion" Response Options on Data Quality. *Public Opinion Quarterly*, 66, 371-403, p. 376; see also: Krosnick, J.(1991). Response Strategies for Coping with the Cognitive Demands of Attitude Measures in Surveys. *Applied Cognitive Psychology*, 5, 213-236.
- <sup>40</sup> Binswanger, J. & Schunk, D. (2008). *Does Experience and Sample Attrition Affect Response Behavior in Panels?* Presented at the MESS Workshop, Tilburg, The Netherlands, Slide 16.
- <sup>41</sup> Smith & Hofma-Brown, Id. at p. 14, Table 2.
- <sup>42</sup> Conrad, F. G., Tourangeau, R., Couper, M. P., & Zhang, C. (2010). *Professional Web Respondents and Data Quality*. Presented at The American Association for Public Opinion Research (AAPOR), Chicago, IL, Slide 26.
- <sup>43</sup> Cape, Peter. (2008). ASC Conference - Multiple Panel Members: Saints or Sinners? *International Journal of Market Research* 50(5): 702-704.
- <sup>44</sup> Frede et al., Id. at p. 4.
- <sup>45</sup> Coen et al., Id. at p. 12.
- <sup>46</sup> Coen et al., Id.
- <sup>47</sup> See, e.g., Downes-Le Guin, who notes that straightliners click the same response vertically for all responses on a page. Downes-Le Guin, T. (2005). Satisficing Behavior in Online Panelists. *MRA Annual Conference and Symposium*, Slide 16.
- <sup>48</sup> Cape, Id. at p. 703.
- <sup>49</sup> Smith & Hofma-Brown, Id. at p. 6.
- <sup>50</sup> Vonk et al., Id. at p. 22, Table 2.
- <sup>51</sup> For instance, respondents were more likely to agree with statements such as "I try my best when filling out surveys," and "I always concentrate when answering the questions." de Wulf, K. & Berteloot, S. (2007). Duplication and Multisource Panel Recruitment: Real Quality Differences or Idle Rumours? *Panel Research*. Orlando, FL: ESOMAR, p. 7, Table 4.
- <sup>52</sup> Walker et al., Id. at p. 470.
- <sup>53</sup> Cape, Id. at p. 703.
- <sup>54</sup> Conrad et al., Id. at Slide 18.
- <sup>55</sup> Chang, L. & Krosnick, J. (2009). National Surveys via RDD Telephone Interviewing Versus the Internet: Comparing Sample Representativeness and Response Quality. *Public Opinion Quarterly* 73(4), 641-678, p. 674.
- <sup>56</sup> We have achieved the same effect by weighting the survey data to match the survey-taking distribution for the entire panel.
- <sup>57</sup> The steps that we took to examine the impact of FSRs required the cooperation of the panel companies with whom we were working.

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## Contact

For further information and questions, please contact the author:

### **Healey C. Whitsett**

Consultant

NERA Economic Consulting

+1 215 864 3872

[healey.whitsett@nera.com](mailto:healey.whitsett@nera.com)