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Comparing panel conditioning and quality between panel methods

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Summary / Abstract

After the rapid and widespread emergence of online access panels, we are currently witnessing a new trend towards online custom panels that are specifically built, used and managed for research purposes of one company or its brand(s). This study compares the online access panel 'XL Online Panels' with a dedicated and branded online research panel from Heinz, generating conclusions on the relative advantages and disadvantages related to using either of them. Specific attention is paid to panel member conditioning and quality.

Introduction

As business decisions are increasingly being made on the basis of information derived from online panels, it is crucially important to understand how different panel approaches affect the insights we derive from them. In line with this, Taylor (2007) suggested that researchers spend more time studying the nuances of different online panel methods. In our study, we focus on two different online panel methods: access panels and custom panels.

Following the gradual change of marketing research from interruption research to permission research, online access panels, broadly defined as a pool of subjects who have expressed their willingness to participate in web surveys on a regular basis (Bosnjak, Tuten and Wittmann 2005; Dennis 2001; Körner and Nimmergut 2004), have become increasingly popular. The next phase of marketing research is engaging research, which is based on conversations and two-way interactions where 'adults meet adults' (Briggs and Walton 2007; Comley 2006; Comley and Andersson 2007; Cooke and Buckley 2006). Dedicated, custom panels are much more aligned with this new marketing research reality. Custom panels have clear advantages over access panels as they allow researchers to identify the most conscientious respondents (Loeb and Hartmann 2006), reach specific and hard-to-access demographic groups (Malagoni and Barnsdale 2007), receive ongoing feedback (Dorsey 2007) and create a closer and more direct relationship with customers (Dorsey 2007; Scholes and Connor 2007). Furthermore, custom panels enable better protection of confidential information that is shared with panel members. However, little is known about the specific ways in which custom panels might (or might not) differ from access panels in terms of the ratings such panels give and in terms of panel member conditioning.

In this paper, we focus on two fundamental types of comparisons: those between access and custom panel members and those within a custom panel across time. Members of XL Online Panels (XLOP) constitute our access panel group and members of a Heinz custom panel constitute our dedicated panel group.

Effects of group membership: belonging to an access vs. a custom panel

It is reasonable to expect that ratings of a product could differ between members of custom versus access panels. For example, as members of a custom panel are closer to a limited set of brands than members of an access panel are, we can expect them to have a more genuine interest in sharing their views about these brands. Furthermore, stronger identification with the custom panel might increase intrinsic motivation to respond accurately and honestly. In line with this, we can assume that the quality of custom panel members might be higher.

One psychological mechanism that could shape differences between access vs. custom panel members is moral obligation - the extent to which an individual feels morally obliged to contribute to the panel. One could hypothesize that this feeling of moral obligation is higher among members of a custom panel given the stricter selection mechanism that is commonly applied (Dennis 2001). Another mechanism that may play a role in potential differences between panel members is the perceived social pressure from other members of the panel or community, referred to as 'subjective norm' in Ajzen's (1991) theory of planned behavior (Bosnjak, Tuten and Wittmann 2005). As custom panels are typically smaller and more focused, we might expect the social pressure effect to be stronger in a custom panel versus an access panel. A third mechanism could be a sense of social identity as a custom panel member, with resulting increased identification with a (limited set of) specific brand(s) (Tajfel and Turner 1986). This combination of heightened identity and identification with the custom panel might play a critical role in the formation of group membership effects in a custom panel.

Thus, our first hypothesis (H1) concerns the effect of panel group membership: belonging to a dedicated panel (e.g. Heinz panel) versus a regular online research panel (e.g. XLOP panel) on concept rating scores. *If, as we expect, custom panel membership leads to an increased sense of closeness to a (limited set of) specific brands and a stronger identity as a panel member, rating scores should be more positive in the Heinz panel, compared to the XLOP panel. In a parallel manner, panel member quality (response rate*

and motivation) might also be higher in the Heinz (vs. the XLOP) panel.

Effects of panel member conditioning

Professional respondents are typically seen as people who either participate frequently in surveys or who join multiple panels (Taylor 2007). While some have speculated that repeat participation in market research studies or belonging to multiple panels might lead to bias in responses (Cartwright and Nancarrow 2006; Nancarrow and Cartwright 2007), evidence for this phenomenon is mixed. For example, some evidence suggests that multiple panel membership does not seriously undermine the data collected (Cape 2007; Coen, Lorch, and Piekarski 2005; De Wulf and Berteloot 2007; Taylor 2007).

If panel member conditioning does indeed occur, one could think it would be especially likely under circumstances that are characterized by (1) a high degree of participation frequency, (2) a narrow brand focus, and (3) a narrow topic focus (e.g. concept screening). Conditioning can occur in two broad ways: it might trigger greater sensitization to and learning about the topic, referred to as 'real change' and it might change the respondent's disposition to the research process itself, referred to as 'change in reporting' (Nancarrow and Cartwright 2007). An example of 'real change' is the learning that takes place after a survey: panel members can become more sensitive to a topic after having been questioned about it, stimulating them to notice information about it, share it with friends or relatives, and so on (Dennis 2001). An example of 'change in reporting' is the learning about how to improve the process, making panel members more research savvy. While these effects may be interpreted as negative, a number of researchers have discussed the potential benefits of certain types of conditioning (Nancarrow and Cartwright 2007).

Our second hypothesis (H2) thus concerns panel member conditioning. *If, as expected, frequent exposure across time to a specific kind of market research survey on a limited set of specific brand(s)leads to conditioning, then panel members who have participated multiple times should give different ratings of products than panel members who are participating in a concept test for the first time.*

Method

During the summer of 2008, 2.000 Dutch participants were recruited from the existing panel of XL Online Panels into a custom Heinz research panel. This research community is multi-branded and exclusively available for Heinz projects. It has the following objectives:

1) To better protect confidential information (e.g. via a signed confidentiality agreement, installation of specific software on PC of members of the community)
2) To obtain more detailed profiling information on each of the Heinz research community members so that this can be linked to each of the studies in which these members participate
3) To set up a more in-depth and ongoing dialogue with the screened Heinz research community members related to the Heinz brands, products, campaigns, ... (e.g. via a bulletin board, via sharing results from the studies carried out)

The current study had two main goals, as outlined above. The first was to examine differences between the dedicated (Heinz) panel and the access (XLOP) panel in terms of ratings given on concept tests. The second goal was to expose respondents in a custom panel to conditions of higher frequency, brand and topic focus and to observe whether or not participant responses differ (become conditioned) as a result. Members of the XLOP access panel constituted a control group. As the incentive system used might impact resulting panel member quality (Göritz 2004), a similar incentive scheme was used for members of the Heinz panel and members of XL Online Panels.

The study was longitudinal by design. At five different time points, occurring approximately two weeks apart from one another, participants in the Heinz Custom Panel were invited to screen five different concepts (see Figure 1 below). Within the Heinz Panel, the research design was largely within-subjects; that is, most participants were invited to screen five concepts, one at each wave. However, because not all of the members of the Heinz community were invited at each time period, there were new and repeat Heinz respondents at each wave.

The research design in the control (XLOP) group was entirely between subjects. That is, different participants were recruited at each of the five waves to evaluate the products in the concept test; each participant in the control group only evaluated one of the five Heinz concepts. Thus, the XL Online panels group in this study is a somewhat of a hybrid between a true control group and a benchmark sample. Figure 1 presents a graphical representation of the experimental design, along with sample sizes for all cells examined in the following analyses.

Figure 1

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
Heinz total sample	n = 697	n = 770	n = 811	n = 1.082	n = 1.210
Heinz fresh sample	n = 697	n = 223	n = 221	n = 356	n = 262
Heinz repeat sample	n = 697 (1x)	n = 553 (2x)	n = 384 (3x)	n = 288 (4x)	n = 213 (5x)
XLOP fresh sample	n = 301	n = 213	n = 816	n = 218	n = 253
	Wave 1: Soup	Wave 2: Fruit drink	Wave 3: Cereal	Wave 4: Soup	Wave 5: Cereal

Dependent Measures

Panel Quality

Our first index of panel quality is response rate, which was computed in two different ways in the current study. The first was the number of completed interviews divided by the total number of invitations sent (termed "completes"). The second was the number of participants who started the questionnaire divided by the total number of invitations sent (termed "started"). This latter index is meaningful because some individuals who wanted to participate (and indeed began the survey) were screened out for reasons external to themselves, e.g. the survey was not targeted to their demographic profile.

As a second index of quality, we included a measure of panel member feedback, defined as general satisfaction with each survey. An additional measure of response quality was inferred from responses to an open-ended question included in each wave of the study. At each wave, participants were asked about what they liked about the product (*Likes*). The percentage that provided an answer to this open-ended question was analyzed; this constituted an index of participant quality and motivation.

Product Ratings

At each wave of this study, participants were also asked a number of closed-ended, Likert response questions about the concepts tested. Specifically, questions regarding product *Usefulness, Understanding, Uniqueness, Believability, Enthusiasm, Unpriced Buying Intention and Appeal* were asked about each product at each Wave. In the analyses below, we focus for the most part on Unpriced Buying Intention. Please note that the results involving the other product rating dimensions were very similar to those for the Unpriced Buying Intention.

Data analyses

To investigate **Panel Method** effects (differences between the Heinz vs. XLOP panels in terms of quality and product ratings), "Fresh Heinz" participants (e.g. only those that were participating for the first time at a given wave) and "Fresh XLOP" members (e.g. all XLOP members at a time wave-these individuals only participated once) were compared on each important variable of interest. For Likert scale product ratings, ANOVAS were used to compare the Heinz and XLOP groups. For percentages of open-ends responded to, Chi-Square analyses were used.

To examine **conditioning** within the Heinz panel group, identical statistical techniques were used. The groups that were compared were the "Fresh" Heinz respondents (e.g. only those that were participating for the first time at a given wave) vs. "Repeat" Heinz respondents (e.g. those who had participated in the current wave and all previous waves). Conditioning was said to occur if consistent, significant and meaningful differences were found between these groups.

In addition to examining statistical significance, we also considered effect size when interpreting our results. Effect size provides a picture of the magnitude of the differences uncovered. As such, it answers the question: is this difference meaningful? Statistical significance, by contrast, simply implies that an obtained difference is likely to be replicated in another sample (e.g. a reliable difference). Especially when sample sizes are large (as in the current study), very small differences can be statistically significant but practically meaningless. Thus, considering effect size in conjunction with statistical significance gives a more complete picture of the data and any observed differences. In the current work, we use R square, which gives the percentage of variance in the dependent variable accounted for by the independent variable, as our index of effect size.

Results

The results from this study are presented below. The two main research questions (e.g. Panel Method and Conditioning) are addressed in separate sections.

Group Membership Effects

Panel Quality

The first index examined between the Heinz vs. XLOP panels was that of response rate. For this analysis, two different ways of calculating response rates were studied (as explained above): percentage "completes" and percentage "started."

The chart below (figure 2) shows the percentages of "completes" and "started" participants in the Heinz and XLOP panels for all five waves. As can be seen clearly, at every occasion the Heinz panel evidenced much higher complete and start rates than the XLOP panel. This provides clear evidence of the superiority of the access panel in comparison to the dedicated panel.

The second and third indexes of panel quality were satisfaction rates and percentage of respondents who answered the open-ended question regarding product likes. These analyses revealed consistent differences between the Heinz and XLOP panel groups (see Figure 3). Heinz panel members were more satisfied than their XLOP counterparts at all five waves, though examination of the effect sizes indicated that these differences were very small. Indeed, panel membership accounted for no more than 4% of the variance in satisfaction scores between the Heinz vs. XLOP groups. In four out of the five waves, a greater percentage of Heinz participants (as compared to XLOP participants) responded to the open-ended question about product likes. Once again, examination of the effect sizes revealed the differences between Heinz and XLOP panel groups to be very small in nature, accounting for at most 6% of the variance in percentages of open-ended responses.

Figure 2

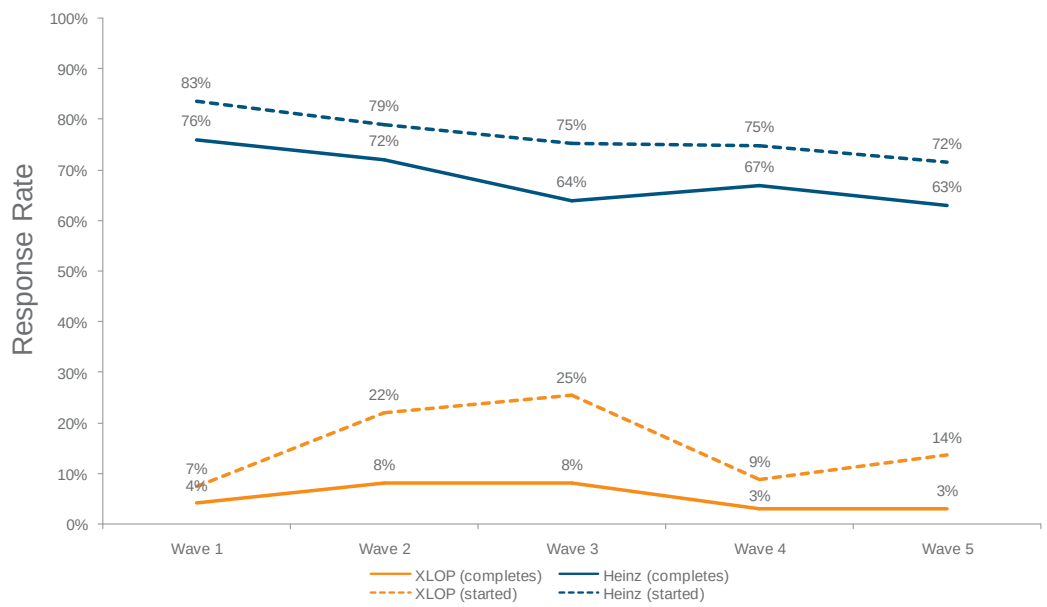
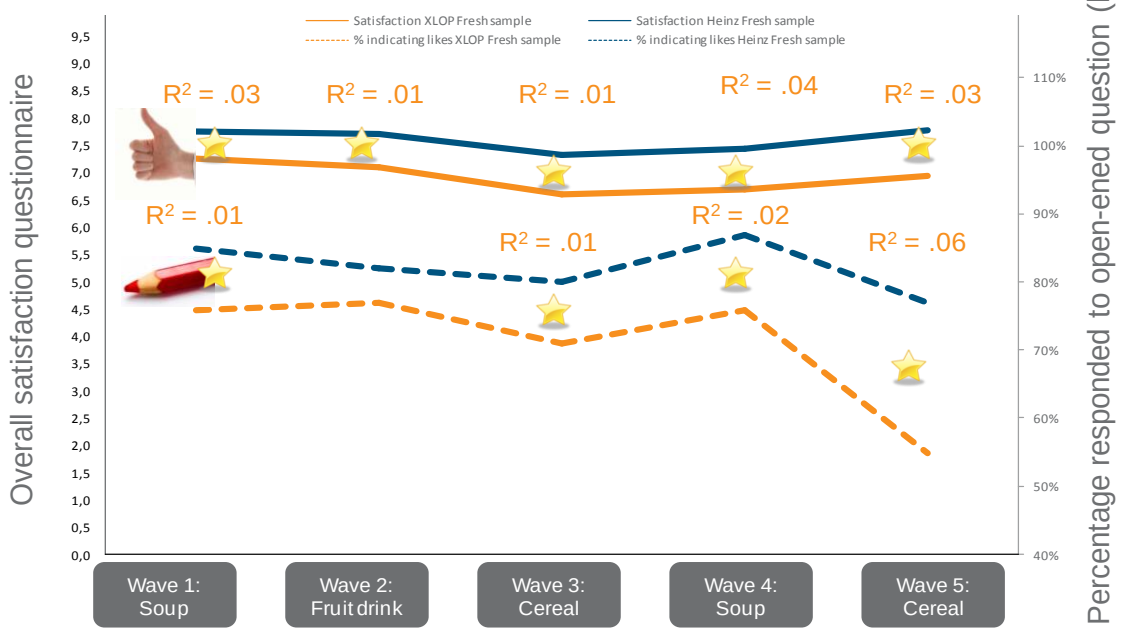


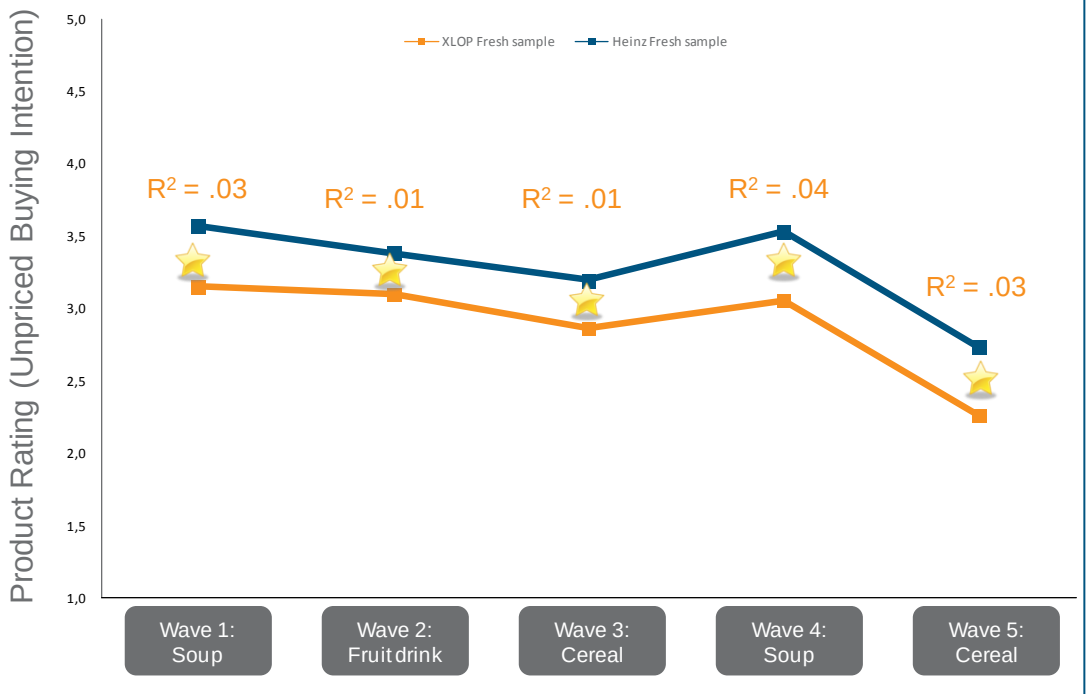
Figure 3



Product Ratings

Differences in product ratings between the Heinz vs. XLOP groups were examined for a number of evaluative dimensions. Figure 4 below presents an illustrative example from these analyses: differences between the panel groups on Unpriced Buying Intention. At all five waves, Heinz members evidenced higher scores, indicating that they felt more likely to purchase the product tested. However, examination of effect sizes showed that these differences were very small in nature, with panel group accounting for at most 4% of the variation in Unpriced Buying Intention scores.

Figure 4



Conditioning Effects

Panel Quality

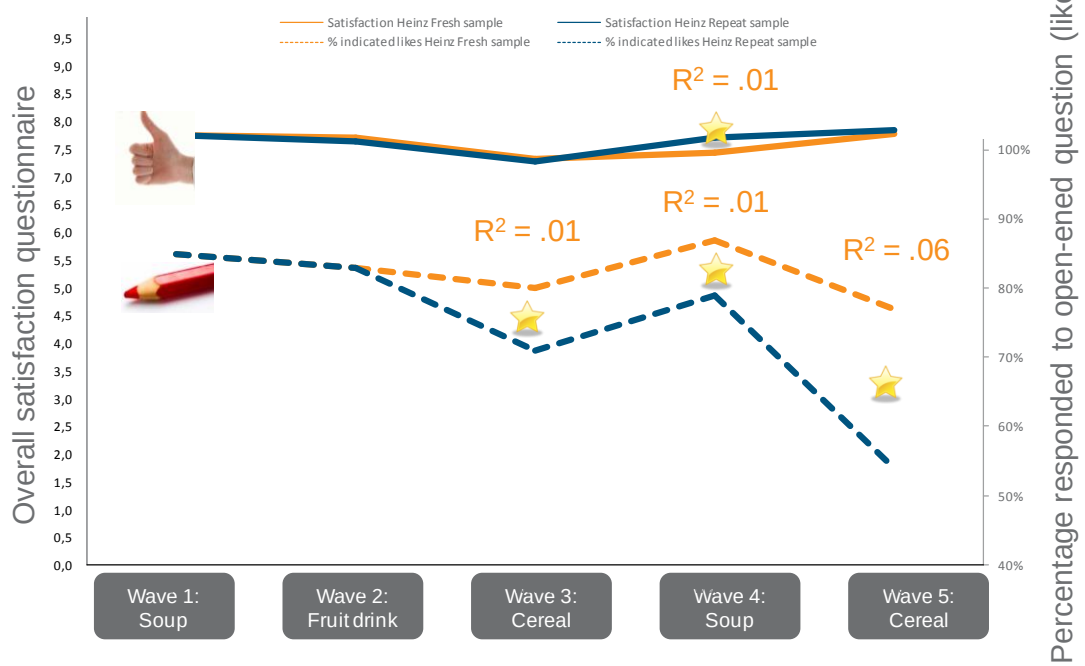
To examine conditioning effects, differences were examined on the key dependent measures between Fresh and Repeat Heinz panel members (Figure 5). Because these two groups were created from the overall Heinz panel member group, it was not possible to compute response rate separately for Fresh vs. Repeat Heinz panel members.

Survey satisfaction was virtually identical between the Fresh and Repeat Heinz panel members. Only at Wave 4 did these groups differ (with the Heinz Repeat group being more satisfied), but the effect size analyses revealed that this difference was miniscule.

The percentage of Fresh and Repeat Heinz members who responded to the open-ended question about product likes did not differ in Wave 2. However, in Waves 3-5, Fresh Heinz respondents were significantly more likely to respond to the open-ended questions than were Repeat Heinz respondents.

Once again, the analyses of effect size suggested that these differences were small in nature, accounting for at most 6% of the variation in percentage of open-ended questions answered.

Figure 5



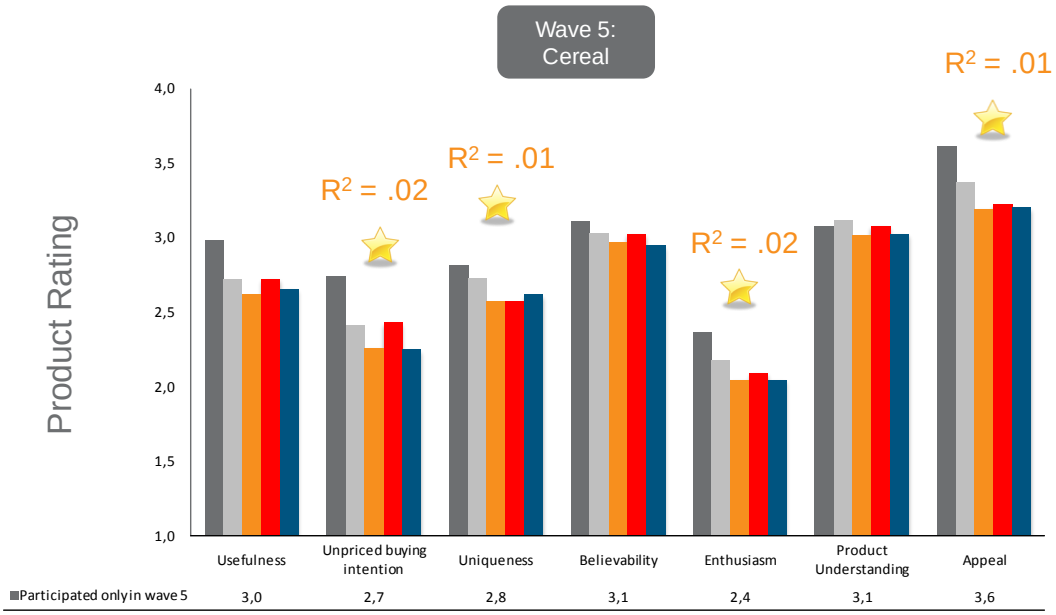
Product Ratings

Differences in product ratings between the Fresh vs. Repeat Heinz groups were examined for a number of evaluative dimensions. Figure 6 below presents an illustrative example of these analyses- key scores on the Unpriced Buying Intention measure. There were no differences on this index between Fresh and Repeat Heinz groups at Wave 2. However, at Waves 3-5 significant differences emerged, with Fresh Heinz respondents indicating higher Unpriced Buying Intention than Repeat Heinz respondents. Nonetheless, examination of effect size scores indicated that this difference was small in nature, accounting for at most 3% of the variation in Unpriced Buying Intention scores between Heinz groups.

In order to obtain a more nuanced understanding of the influence of panel conditioning on product rating scores, differences on key product ratings were examined among Heinz panel members who had participated only in Wave 5, and those who had participated in 5, 4, 3, or 2 waves in total (see Figure 7). Each dependent measure was examined using an ANOVA, with total number participations (1, 2, 3, 4 or 5) as an independent variable. As can be seen in Figure 6, 4 of the 7 ANOVAs revealed significant effects. Post-hoc tests employing Bonferroni corrections revealed that, in the case of significant ANOVAs, new Heinz participants (e.g. those who only participated in Wave 5) were nearly always more enthusiastic about the product than were those who had participated in all 5 waves. Another recurring difference emerged in the post-hoc tests was that between New Heinz participants and those who had participated in three waves; when comparing these two groups, New Heinz participants were almost always more enthusiastic. However, examination of the effect sizes suggests that previous participation group accounts for at most 2% of the variation in key product scores, demonstrating the small size of these effects.

Figure 6

Figure 7



	Usefulness	Unpriced buying intention	Uniqueness	Believability	Enthusiasm	Product Understanding	Appeal
Participated only in wave 5	3,0	2,7	2,8	3,1	2,4	3,1	3,6
Participated in 2 waves	2,7	2,4	2,7	3,0	2,2	3,1	3,4
Participated in 3 waves	2,6	2,3	2,6	3,0	2,0	3,0	3,2
Participated in 4 waves	2,7	2,4	2,6	3,0	2,1	3,1	3,2
Participated in 5 waves	2,7	2,2	2,6	2,9	2,0	3,0	3,2

Conclusions

The key conclusions from this study are discussed separately by research question below.

Panel Method

The analyses investigating Panel Method compared Fresh Heinz vs. Fresh XLOP participants at each wave on measures of Panel Member Quality and Product Ratings.

In sum, the differences between Panel Groups are small, except where response rate is concerned. Given the far superior response rate in the Heinz group, dedicated (vs. access) panels might provide easier and faster data to aid decision makers. The concept rating scores of the Heinz panel are slightly better than in the XLOP panel, but if decision makers take this into consideration, and perhaps reweight key scores slightly, the benefits of using dedicated panels could very well outweigh the disadvantages of slightly inflated concept scores.

Panel Conditioning

The analyses investigating Panel Conditioning compared Fresh vs. Repeat Heinz members at each wave on Measures of Panel Member Quality and Product Ratings.

In sum, no conditioning effects were evident at Wave 2. However, in Waves 3-5 key, some differences emerged between Fresh vs. Repeat Heinz participants. Specifically, Fresh Heinz participants appeared to give better data quality, and to be more enthusiastic about the product tested. This suggests a conditioning effect in the Repeat Heinz participants, in that they respond less frequently to open-ended questions and are comparatively more critical of the products in Waves 3-5. However, all differences between the Heinz subgroups were quite small in nature, suggesting that the conditioning effects were small and that the observed concept scores were not very different on the whole.

Overall, it appears as though these two effects observed in the Heinz group may end up canceling each other out. The small tendencies for Heinz panel members to be more enthusiastic than XLOP members on the one hand, but for them to grow more critical of concepts with each successive wave on the other hand, indicates the potential for the effects to neutralize each other as the community evaluates increasing numbers of concepts.

Limitations and Future Directions

It is perhaps worth considering some of the limitations of the current research. The first is that the current study focused only on one method of panel recruitment. Specifically, members of the Heinz community were recruited from the already-existing XLOP panel. Thus, the results generated from this study might not apply to dedicated panels that are formed via other recruitment methods.

A major limitation in recruiting participants to the Heinz community concerns the requirements for entry into the group. Specifically, participants in the Heinz community were required to sign a confidentiality agreement and to install a special piece of software on their computers. These entry barriers to the Heinz community might play a role in determining what kinds of people decide to join the communities (e.g. especially enthusiastic individuals), which in turn could influence how Heinz community members evaluate the products they are asked to rate.

Finally, this study only looked at the first 5 waves of concept testing in the Heinz community. However, this community was built with the goal to serve as a long-standing research pool for Heinz concept tests. As such, this group will continue to evaluate many more Heinz concepts in the future. Thus, the current study only focuses on differences in the very beginning of the Heinz community's existence. A goal of future research is to examine differences between the Heinz panel members and XLOP panel members after 10 concept tests and beyond.

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