Does Loyalty Dictate Blind Preference? An Examination of Inconsistency in Preferences

Sinopoli, DA, Hauswirth, JJ & Lawless, HT
Cornell University Food Science Department

Abstract

In the 1980s, consistent market research data showed that Pepsi was preferred to Coke in a blind taste test, causing the Coca-Cola company to formulate New Coke and pull original Coke from the market. We attempted to replicate this finding in 2010, with 101 cola drinkers using a paired preference test as recommended by ASTM and the NBC advertising claim substantiation guidelines. A triangle test was also performed by the same consumers. The objectives were to see 1) whether preferences were stable when a second paired test was performed, and what is the degree of random switching, and 2) how the results of the blind preference test compare to what the consumers say they usually drink, and their degree of loyalty to their brand of choice. We found that preferences were inconsistent, with a non-significant win of Pepsi in the first trial and no clear winner in the second trial, and those who claimed to have a loyalty were inconsistent in their choices.

Introduction

It is often questioned whether a paired preference test itself truly shows that one has a certain preference. After much research regarding the validity of the paired preference test and its applications in real life, E.P Köster et al (2002) concluded that the paired comparison method truly did not predict real choices in food, because of this natural tendency for people to switch their preference. It was found in a paired comparison test, between 24.3 and 33.3% of adults change their preference. This large percentage change suggests that no real definitive answers regarding preference can be found simply using a paired preference test. Our experiment wished to test this statement using cola products. Another point of interest was how the results of the blind preference tests compare to what people say they normally drink, and their degree of loyalty to their brand of choice.

Materials and methods

The panel consisted of 101 cola consumers. The test included two paired preference tests followed by a fully counterbalanced triangle test, with six different combinations. The two colas tested were regular Coke and Pepsi. The soda was kept in an ice bath at 32°F and all samples were poured at the same time to limit any differences in carbonation. All samples were 60 mL and labeled with random 3 digit codes. The preference tests were identical and included a "no preference option". The entire test was double blind. The final slide requested information about age, gender, type of cola normally consumed, frequency of consumption, and whether or not the participants were loyal to the brand.

A 3x3 matrix that compared the two preference tests was used to calculate overall preferences and the degree of random switching. The Ferris k-visit method was also used to determine the inconsistency between the preference tests. Additionally, chi-squared tests were performed on the data comparing preference test data versus stated brand normally consumed.

Results

The degree of switching was calculated by tabulations of the diagonals on the 3x3 matrix and was 44.6% (55.4% inconsistent). This value was also calculated by the Ferris model, with a value of 41.79 (58.3% inconsistent). These data suggest that a slight majority of individuals were unable to choose a distinct preference both times. There was a significant discrimination ($p<0.001$) in the triangle test, with the proportion of discriminators equal to 28%. It appears that some people were able to tell the difference between Pepsi and Coke, but that in general they didn't have a consistent preference.

		Second Preference Test		
First Preference Test		**Coke**	**No Pref.**	**Pepsi**
	Coke	18	6	16
	No Pref.	5	0	1
	Pepsi	21	7	27

Table 1. 3x3 Matrix of Cola Preferences During Two Blind Paired Tests

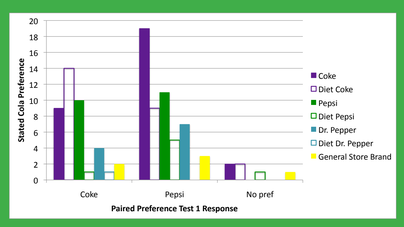

Figure 1. Trial 1 Preference Test Answer vs. Stated Preference

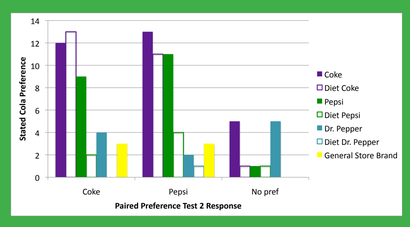

Figure 2. Trial 2 Preference Test Answer vs. Stated Preference

Overall we found variation when looking at the stated preference and degree of loyalty, and only 12.2% of participants who labeled themselves as loyal were consistent in their preferences. As seen in Table 1, it was calculated that 70.4% of individuals who claimed they were loyal to a certain product were inconsistent in their choice (only 29.6% consistent). In contrast, 52.7% of individuals who did not claim to have a loyalty were inconsistent in their choice (47.3% consistent). This shows a possible paradoxical result.

There were 6 "no preference" votes in the first trial and 13 in the second, but there were zero "no preferences" both trials. There are many possible reasons why people avoided the "no preference" option, such as they felt they had to choose an answer to please the researcher.

One unique observation when looking at the results from the first paired preference tests compared to the stated preference is that those who say they prefer Diet Coke tended to pick Coke in the test, and those who say they prefer Coke picked Pepsi in the test. This occurrence was not evident in the second paired preference test. Chi-square tests were performed on these sections in both tables, with a value of 4.21 in the first trial and 0.19 in the second trial. These numbers show a lack of repeatability and reliability.

Conclusions

- Preferences were inconsistent, and there was not a winner in the second preference test.
- Panelists showed avoidance of the "no preference" option.
- There was a great deal of inconsistency and random switching.
- The degree of loyalty to brand of choice showed variability.

References

CHAPMAN, K.W., GRACE-MARTIN, K., and LAWLESS, H.T. 2006. Expectations and stability of preference choice. J Sens Studies. 21: 441-455.

KÖSTER, E.P., COURONNE, T, LÉON, T, LÉVY, C. and MARCELINO, A.S. 2002. Repeatability in hedonic sensory measurement: A conceptual exploration. Food Quality and Preference 14:165-176.