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## Quantifying Anti-Consumption of Private Labels and National Brands: Impacts of Poor Test Ratings on Consumer Purchases

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Consumers use test ratings to inform their buying decisions and enhance their well-being. This study considers whether and how poor test ratings might induce anti-consumption behaviors, out of fear of poor product performance. In contrast with previous research, the focus for this study is not intrinsic reasons for anti-consumption but rather actual purchasing, or non-purchasing, behavior. With panel data representing 30,000 households, the authors show that the market shares of national brands and private labels considerably decline after the publication of poor test ratings, suggesting high customer churn and anti-consumption behavior. The use of price promotions for national brands also declines, leading to increasing average paid prices. Among private labels, though, poor test ratings affect the use of price promotions and paid prices only to a small extent. These findings in turn suggest implications for manufacturers, retailers, consumers, and scholars.

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Previous anti-consumption studies tend to focus primarily on expressed attitudes or consumer intentions, such that they highlight intrinsic motivations and provide some key insights. For example, Iyer and Muncy (2009) derive an anti-consumption typology that differentiates the focal objects (all consumption or specific products) and relevant concerns (societal or personal). If a consumer avoids a particular product for personal reasons, it implies an anti-loyalty attitude, likely based on the product's failure to meet some functional or symbolic need. Englis and Solomon (1997) also note that the products consumers avoid may be as important as the products they actively seek, which implies high consumer involvement. Because most people consume products to gain some benefit (Kotler and Armstrong 2014), such involved consumers might sense risk even before they purchase (e.g., wasted time, monetary losses, physical damage)

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The Journal of Consumer Affairs, Spring 2016: 145–165

DOI: 10.1111/joca.12084

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(Imkamp 2009) and worry about the threat of buyer's remorse (Bell 1967). These studies accordingly suggest that perceived risks and fear of incorrect purchase decisions can lead to anti-consumption attitudes (Cherrier, Black, and Lee 2010).

As Lee, Fernandez, and Hyman (2009) caution, though, the field lacks sufficient longitudinal research that can explicate anti-consumption attitudes and consumers' actual behaviors over time. For example, to mitigate their purchase risk, consumers often consult test ratings, which influence their actual buying decisions (Buxel and Schulz 2010). Positive test ratings likely increase customer demand; poor test ratings may lead to consumption deprivation (Kaas and Tölle 1981) or anti-consumption attitudes and behaviors (Albinsson, Wolf, and Kopf 2010), especially if avoiding consumption enhances consumer well-being (Marquardt and McGann 1975). Considering the potential influence of poor test ratings, this study seeks to extend extant research into anti-consumption by addressing the following research questions:

- Does anti-consumption arise in response to poor test ratings?
- How do poor test ratings affect actual purchases?
- How can retailers deal with the impacts of poor test ratings on purchases?
- What insights derived from quantitative data pertaining to consumers' actual behavior can inform anti-consumption research?
- How do test ratings influence consumer well-being?

To determine whether poor test ratings lead to anti-consumption, in the form of experiential avoidance (Lee, Conroy, and Motion 2009) and as a reaction to poor product performance, we use quantitative measures. Previous research on anti-consumption tends to focus on intrinsic motivations and rely on interview data (e.g., Hoffmann and Müller 2009), thus ignoring the potential impacts of variables such as product price or quality. In contrast, we consider market shares, average paid prices, and promotion shares, according to household panel data representing approximately 30,000 households. Thus we can calculate more precisely how poor test ratings influence consumers' actual purchases, as well as provide suggestions regarding how retailers and manufacturers might mitigate consumers' anti-consumption behaviors. Furthermore, this approach helps bridge the widely acknowledged gaps among expressed attitudes, intentions, and behavior (Belk 1985), in that we use actual purchase data instead of surveys, interviews, or experiments.

Similarly, research into test ratings frequently relies on surveys or interviews (Fritz et al. 1984; Hilger et al. 1984), such that the studies

generally ignore actual purchasing behavior or key market parameters. To address this research gap, we investigate how actual test ratings influence real-world purchasing data. Specifically, we use test ratings gathered from the German consumer organization Stiftung Warentest (StiWa), which provide a good indicator of products' ability to meet consumers' needs.

Finally, this study carefully differentiates the effects for national brands versus private labels. Such a distinction becomes increasingly necessary with the widening distribution of private labels (Grewe 2010; Olbrich and Grewe 2009) and changing perceptions of private labels and national brands (Nenycz-Thiel and Romaniuk 2009). Because private labels exert important influences on store attractiveness (Olbrich and Grewe 2013), poor test ratings could have negative image effects for a retailer's brand. The retailer must find ways to mitigate these negative effects of poor test ratings; we posit it might adjust its use of price promotions, a topic rarely discussed in prior research (Boatwright, Basuroy, and Kamakura 2007).

With these unique data and approaches, we reveal that the market shares of national brands and private labels decline after the publication of poor test ratings, and this high customer churn rate appears to signal anti-consumption. In contrast, poor test ratings do not seem to harm private labels to the same extent that they damage national brands, reinforcing the notion that consumers perceive private labels and national brands very differently. In particular, it appears that consumers mainly recall test ratings for well-known national brands (Burton et al. 1998). However, for national brands, the publication of poor test ratings prompts decreased uses of price promotions and thus higher average prices, which represent likely outcomes of retailers' efforts to mitigate the negative effects of the poor test ratings on their brand images.

In the next section, we review existing literature related to anti-consumption and test ratings. After we outline the research questions, we present our data and analysis methods. The empirical results in turn lead to several implications, as well as suggestions for further research.

## LITERATURE OVERVIEW

Two existing literature streams are relevant to this study, namely, that pertaining to anti-consumption and that associated with the impacts of poor test ratings.

### Anti-Consumption Research

Among the extensive literature on anti-consumption, we highlight research that pertains to consumers' reactions to poor product performance

or poor test ratings. (For extensive reviews of anti-consumption research in general, see special issues of *Psychology & Marketing* 19 (2), *Journal of Business Research* 62 (2), *Journal of Consumer Behaviour* 9 (6), and *Journal of Macromarketing* 33 (3).) In general, anti-consumption entails “resistance to, distaste of, or even resentment or rejection of, consumption” (Zavestoski 2002, 121). Anti-consumption activities thus “range from specific product selection based on ethical and/or ecological considerations, to overall reduced consumption and/or boycott of specific product categories” (Craig-Lees and Hill 2002, 188).

Rather than this general view, Cherrier, Black, and Lee (2010) differentiate three types of anti-consumption: intentional, when a person decides not to consume something; incidental, or when a person chooses a specific brand and does not buy competing products; and ineligible, which occurs when a person cannot consume a particular product, such as due to legal age prohibitions on the consumption of alcohol. Other authors cite brand dislike as a reason for anti-consumption, defined by Dalli, Romani, and Gistri (2006, 87) “as the negative judgment expressed by the consumer and/or implied in the choice not to buy.” In describing the different determinants and levels of dislike, these authors conclude that an unfair price–quality ratio can prompt consumers to reject a purchase of a specific brand or product.

According to Lee, Motion, and Conroy (2009c, 170), anti-consumption also results from brand avoidance, which differs slightly from brand dislike in that it involves “incidents in which consumers deliberately choose to reject a brand.” These authors delineate four types of brand avoidance to summarize why consumers reject specific brands. First, experiential avoidance occurs when consumers avoid brands that do not meet their expectations, perhaps as a result of prior negative experiences. Second, identity avoidance arises from symbolically unappealing brand promises. Third, moral avoidance occurs when the brand’s promises are socially detrimental. Fourth, deficit-value avoidance results from functionally inadequate promises. Nenycz-Thiel and Romaniuk (2011) suggest some reasons for brand avoidance also relate to the difference between private labels and national brands, such that consumers tend to appraise the quality of private labels as inferior to that of national brands, because the former are usually lower priced and not strongly advertised. Because such private labels induce higher perceived purchase risks, consumers may avoid them more than they do national brands. Finally, Nenycz-Thiel and Romaniuk (2011) emphasize that many consumers perceive private labels as a single, homogenous group, even if they are produced by different stores. Then they

might avoid all private labels in response to a negative experience with just one specific private label in the past.

### Poor Test Rating Research

Negative information about a product hinders its acceptance and may lead to rejection (Arndt 1967), a form of anti-consumption. Mizerski (1982) points out that unfavorable ratings have significantly stronger effects on product performance and purchasing behavior than do favorable product ratings. Because many consumers are risk averse, negative information has a major impact on their decision-making process, especially for new products, which may lead them not to buy (Kahneman and Tversky 1979). Negative product-related information should have a particularly powerful impact on consumers' decisions not to buy (Shen and Wyer 2008). For example, the studies summarized in Table 1 highlight the impact of product test ratings on consumer behavior.

Although these studies suggest that poor test ratings lead to anti-consumption, few of them take actual purchasing behavior into account. Moreover, insufficient research provides longitudinal analyses or addresses the gaps among expressed attitudes, intentions, and behavior. This empirical study seeks to close these research gaps.

### RESEARCH QUESTIONS

To quantify anti-consumption, we examine the impact of poor test ratings on consumer purchases, as represented by household panel data. In addition to these market share-based measures, we seek to describe retailers' reactions to anti-consumption, so we also gather the use of price promotions and changes in the average prices paid, in relation to the effects of negative test ratings.

We distinguish between national brands and private labels, because these label types differ in their pricing, the objectives of the trademark holders, and the impact on store attractiveness (Olbrich and Grewe 2013). As Nenycz-Thiel and Romaniuk (2011) explain, private labels tend to be associated with lower quality and higher perceived purchase risks than national brands. Because consumers often regard private labels from different stores as a homogenous group of mutually exchangeable brands (Nenycz-Thiel and Romaniuk 2009; Richardson 1997), their rejection of a specific private label, perhaps due to negative previous experiences, may lead them to avoid all private labels. With this study, we seek to compare

TABLE 1  
*Literature Overview*

Author(s) (year)	Country	Findings
Nelson (1970)	USA	Test ratings are used more often for purchases of experience than search goods and more often for durable than non-durable goods.
Marquardt and McGann (1975)	USA	Test ratings are important for consumer well-being. It is less likely that consumers purchase products with poor test ratings.
Sepstrup (1978)	Denmark	Test ratings are more frequently used by people with higher incomes.
Kaas and Tölle (1981)	Germany	Product tests change the scope and structure of consumers' information processing. They allow for a greater use of test ratings before purchasing a product and cause increased uses of other information sources. Test ratings influence purchasing behavior and social impact levels. A negative test rating may lead to a high customer churn rate and to a direct dissent in the form of negative word of mouth or complaints. Consumers may participate in consumer boycotts and consumption strikes. Thus, poor test ratings can lead to anti-consumption.
Fritz et al. (1984)	Germany	82% of interviewed retailers stated that sales volume declined after publication of a poor test rating. Revenue decreased by 15–27%. 19% of interviewed manufacturers recorded a significant fall in revenue due to poor test ratings. Up to 92% of interviewed stores and mail order companies eliminated the corresponding products from their assortments.
Hilger et al. (1984)	Germany	40% of interviewed department stores lowered the prices of products with poor test ratings.
Silberer (1985)	Germany	The objectives of product tests are enhancing market transparency, easing the burden of product choice, strengthening consumers' reflection on demand, improving the mobility of demand, and refining decision-making quality.
Ippolito (1992)	n/a	Investment monies move away from recent poor performers toward recent good performers.
Narasimhan, Ghosh, and Mendez (1993)	USA	Although price is the primary determinant of demand for most non-durable goods, product quality is a major determinant of demand for most durable goods. Price and customer perceptions of product quality influence the sales rate of durable goods.
Cordell (1997)	USA	Objective quality information has a higher impact on perceived quality than subjective expertise and familiarity. The perception of quality depends on the knowledge of the consumers.

TABLE 1  
*Continued*

Author(s) (year)	Country	Findings
Ahluwalia, Burnkrant, and Unnava (2000)	USA	Commitment influences consumer behavior in the context of negative publicity (e.g., poor test ratings).
Jin and Leslie (2003)	USA	Demand shifts away from poor providers and toward good providers.
Dean (2004)	USA	Poor test ratings lead to negative publicity.
Reinstein and Snyder (2005)	USA	Negative reviews have a significant negative effect on revenue.
Chevalier and Mayzlin (2006)	USA	The impact of one-star reviews on sales is greater than the impact of five-star reviews.
Boatwright, Basuroy, and Kamakura (2007)	USA	Consumer behavior changes with regard to the impact of individual film critics on the market performance of movies.
Moussa and Touzani (2008)	France	Test ratings are important for consumer well-being and reduce asymmetric information. Consumers are able to better judge the quality of a product, and their intention to buy intensifies.
Zhu and Zhang (2010)	USA	For different products, variations of consumer reviews are positively or negatively associated with product sales volume.
Simonsohn (2011)	USA	Expert advice sways consumer demand. Expert recommendations may be correlated with other information consumers hold. An association between what experts recommend and what consumers do should not be interpreted causally.
Gligorijevic (2014)	Australia & international	The impact of online reviews is very strong for info-active consumers, their attitudes, and subsequent purchasing decisions. Info-passive consumers are influenced by traditional word of mouth and retailers.

the precise influence of poor test ratings on national brands and private labels, in line with the following research question:

RQ1: Are there significant differences in the effects of the publication of poor test ratings on market shares, promotion shares, and prices across brand types?

In line with prior findings (Ahluwalia, Burnkrant, and Unnava 2000; Chevalier and Mayzlin 2006; Fritz et al. 1984; Narasimhan, Ghosh, and Mendez 1993; Simonsohn 2011; Zhu and Zhang 2010), we expect the market shares of national brands to decline after the publication of a poor test rating. As Kaas and Tölle (1981) and Ippolito (1992) explain, a negative test rating may cause customers to avoid a product. National brands are embedded more deeply in consumers' perceptions than are private labels (Nenycz-Thiel and Romaniuk 2014), likely due to greater brand awareness of the widely advertised national brands and their ubiquity, in contrast

with private labels that are offered only by selected retailers. Therefore, we anticipate that consumers keep poor test ratings more in mind for national brands than for private labels, and in turn, consumers seem more likely to remember the poor test rating of a national brand at the point of sale and choose a competing offer. In contrast, for private labels, we expect that consumers might recall a prior decision to reject the product to a lesser extent than they would for the case of national brands. That is, we anticipate that in many cases, consumers do not maintain anti-consumption attitudes and behaviors toward private labels in the long run, so that the market share of private labels likely decreases to a lesser extent than does the market share of national brands. Consumers who tend to buy private labels already are likely interested in low prices, whereas buyers of national brands may focus more on high product quality (Olbrich and Jansen 2014). In this sense, we expect the poor test ratings to influence the market shares of national brands negatively but have less influence on the market shares of private labels, for which price dominates product quality as a decision criterion.

We also differentiate regular from promotional retail prices. Retailers often use price promotions to attract customers and increase sales (Ailawadi et al. 2009; Grewal et al. 2011; Olbrich, Battenfeld, and Grünblatt 2006). However, because promoting products with poor test ratings could lead consumers to transfer the poor product image to the retailer's brand (Richardson, Dick, and Jain 1994), we anticipate that retailers are less likely to use price promotions for poorly performing national brands. Similarly, we predict that prices increase after the publication of a poor test rating (Hilger et al. 1984). The prices that consumers pay generally are lower than recommended retail prices, because of the effects of retailers' pricing strategies and promotions (Olbrich and Jansen 2014). By lowering the prices of poorly rated products, retailers might risk negative image effects. Furthermore, retailers set the prices for both national brands and private labels at will (Olbrich and Buhr 2005; Olbrich and Grewe 2009; Olbrich, Grewe, and Orenstrat 2009). However, retailers often use an everyday low price (EDLP) strategy for their private labels, to signal their price competency (Pechtl 2004). Accordingly, we expect that the prices of private labels will not rise, and we propose a second research question:

RQ2: How do market shares, promotion shares, and prices change after the publication of a poor test rating?

## DATA AND METHOD

We used a German panel with purchase data related to the products bought by approximately 30,000 households between 2006 and 2011.



The dataset comprises 5,492,970 records, each representing one or more products bought by one household on one day. The data represent several product groups for which test ratings were easily accessible, including anti-dandruff shampoo (112,171 records), cat food (2,138,830 records), color laundry detergents (102,197 records), dark chocolate (78,323 records), dog food (808,860 records), heavy-duty detergents (130,721 records), milk chocolate (171,173 records), roasted coffee (1,917,126 records), and shampoo for damaged hair (33,569 records). The panel's representative character enables us to calculate relatively accurate market shares, promotion shares, and prices for each product.

To measure product quality, we turned to test ratings published by *StiWa* in 11 issues between 2006 and 2010. To ensure its impartial and objective product tests, *StiWa* engages in independent test planning, refuses to publish advertisements, and undertakes anonymous purchases of test samples. Thus, *StiWa* enjoys wide consumer trust in Germany; Buxel and Schulz (2010) note that 82.5% of the participants in their study were aware of *StiWa*'s test ratings and used them to inform their daily purchase decisions. We matched 30 products (denoted by 46 European Article Numbers [EAN]) in the panel data with product tests, then determined whether each rating indicated "sufficient (C)" or "deficient/failure (D/F)" (test rating  $\geq 3.6$ ) test ratings.

Next, we aggregated the dataset on a weekly basis for each product. The observation period covers 2006–2011, so the resulting dataset consists of a maximum of 313 records for each product. With this approach, we avoid an imbalance across product groups and can calculate the market shares, promotion shares, and prices of the selected products for each week, differentiating between the periods prior to and after the publication of the test ratings. For the market share, we calculate sales volume rather than revenue, to avoid price-based biases. The promotion share represents the discounted units as a percentage of total sales, measured in the same units. For our analyses of variance (which we describe subsequently), we need equal units of time for the pre/post comparisons. The first test of *StiWa* that we employed was published in calendar week 35/2006, so we selected 34 calendar weeks before and after the publication of a poor test rating to represent the pre/post comparison. Finally, we distinguished between national brands and private labels.

The variation in the market shares, promotion shares, and prices across product categories prompted us to calculate measures independent of any single product group. For example, detergents tend to be more expensive than shampoos, and coffee is promoted more frequently than chocolate. Thus, we use a min-max normalization for the market and promotion

shares, based on each product group, so that we can make generalizable statements across product categories. The resulting values span between 0 and 1 and represent each corresponding product, with its market and promotion shares in relation to its product category. We calculated prices relative to the average price in a product group, such that a price greater than 1 is above and a price lower than 1 is below the average price in that product group. We combine these values and the test ratings in a single dataset that provides the basis for our further analysis.

We start by using descriptive statistics to summarize the sample. To analyze whether poor test ratings influence the market share, promotion share, and price of national brands and private labels differently, we next conducted a multivariate analysis of variance (MANOVA), which tested for interaction effects and protected against inflated Type-I error due to multiple tests (Tabachnick and Fidell 2007). If a significant interaction arose, we split the dataset by brand type and conducted an analysis of variance (ANOVA) to determine if the attributes changed across time.

## RESULTS

Table 2 contains an overview of the sample used for this study, including the mean, standard deviation, and number of cases for the market share, promotion share, and price variables. Because we differentiated between national brands and private labels, as well as the time period (i.e., prior or after the publication of the test rating), we obtained precise values. For example, using the market share of national brands, we found that the normalized value declined after the publication of poor test ratings, from .3738 to .1075. Each single case represented the aggregated information about one product (bought by multiple households) in one calendar week.

In an initial MANOVA, we examined brand type (national brand or private label) and time (prior to or after publication of the test rating) as fixed factors, with market share, promotion share, and price as dependent variables. Because Box's test of the equality of covariance matrices was significant ( $p < .001$ ), we used Pillai's criterion instead of Wilk's lambda to test for the significance of the interactions (Tabachnick and Fidell 2007). As the results in Table 3 reveal, we found highly significant interaction effects (Pillai's Trace  $p < .001$ ) between brand type and time with respect to market share ( $p < .001$ ), promotion share ( $p < .002$ ), and price ( $p < .001$ ). The R-squared value for the market share dependent variable is .202; it is .041 for promotion share and .852 for price. Thus, the effects of poor test ratings varied for national brands versus private labels.

TABLE 2  
*Descriptive Statistics*

Variable	Brand Type	Time (Prior or After Publication)	Mean	Standard Deviation	N
Market Share	National Brand	Prior	.3738	.29269	1,258
		After	.1075	.19745	1,258
	Private Label	Prior	.3259	.23899	306
		After	.1884	.21421	306
Promotion Share	National Brand	Prior	.1775	.27959	1,258
		After	.0863	.23406	1,258
	Private Label	Prior	.0647	.20859	306
		After	.0473	.17376	306
Price	National Brand	Prior	1.1298	.09592	1,258
		After	1.2075	.10868	1,258
	Private Label	Prior	.6209	.01748	306
		After	.6154	.02336	306

The significant interaction effects led us to split the dataset by brand type and conduct a ANOVA of how market share, promotion share, and price changed between periods, with the results in Table 4. Except for the promotion share of private labels, all effects were significant. When we include the descriptive statistics (Table 2), we note that the market share of national brands (.3738 to .1075) and private labels (.3259 to .1884) declined after the publication of a poor test rating. Promotion shares decreased for both national brands and private labels following the publication of a poor test rating, but prices increased. However, the reduction of the promotion share of private labels was not significant ( $p < .264$ ), which may reflect the relatively fewer private labels (9 private labels vs. 21 national brands) in our dataset and the short observation period

TABLE 3  
*MANOVA Results*

Source	Dependent Variable	Mean Square	F	p
Brand Type	Market Share	.135	2.239	.135
	Promotion Share	2.836	46.721	.000
	Price	149.182	17,473.106	.000
Time	Market Share	20.073	333.359	.000
	Promotion Share	1.453	23.934	.000
	Price	.643	75.284	.000
Brand Type × Time	Market Share	2.043	33.932	.000
	Promotion Share	.671	11.056	.001
	Price	.853	99.867	.000

TABLE 4  
ANOVA Results

		Mean Square	F	p	$\eta_p^2$
National Brand	Market Share	44.625	715.977	.000	.222
	Promotion Share	5.237	78.771	.000	.030
	Price	3.803	361.947	.000	.126
Private Label	Market Share	2.893	56.173	.000	.084
	Promotion Share	.046	1.257	.263	.002
	Price	.005	10.808	.001	.017

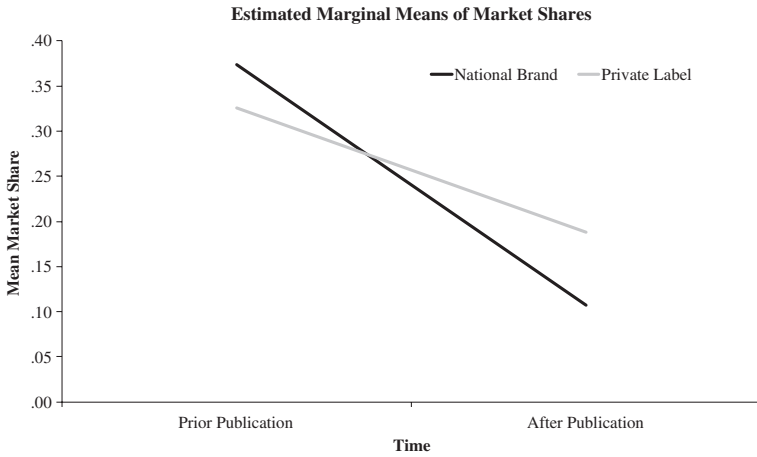
of just 34 calendar weeks. As a measure of effect size, we used partial eta-squared, which spanned between .002 and .222. The publication of a poor test rating had a relatively large effect on the market share of national brands for example, but the effect on the market share of private labels was smaller.

In Figures 1–3, we offer a visual depiction of the findings from Table 2, which helps clarify the interaction effect between brand type and time. Specifically, Figure 1 depicts the interaction as it relates to market share. The market share of national brands decreases to a greater extent following a poor test rating than does the market share of private labels. Figure 2 shows the interaction with regard to promotion share, revealing that private labels are less likely to appear in price promotions. After the publication of the poor test rating, the decline in the share of promotions is much stronger for national brands than for private labels. Finally, Figure 3 reveals the interaction as it pertains to price. National brands generally charged higher prices than private labels, and then after the publication of a poor test rating, their prices increased, whereas the prices of private labels remained relatively constant.

## DISCUSSION

With this study, we have sought to quantify anti-consumption by determining the impact of poor test ratings on consumer purchasing behaviors, as represented by household panel data. Because consumers perceive national brands and private labels differently, we distinguished between them, with the prediction that manufacturers and retailers both feature national brands in frequent advertising campaigns and seek their ubiquitous distribution, so national brands should be more deeply embedded in consumers' consciousness. As a result, national brands appeared more likely to fall victim to consumers' decisions not to buy, as a form of intentional anti-consumption, in response to poor test ratings. To measure such

**FIGURE 1**  
*Two-Way Interaction between Brand Type and Time: Market Share*



reactions by consumers, we measured market shares; to describe retailers’ reactions to consumers’ anti-consumption, we also observed changes in average prices paid and the use of price promotions, for both national brands and private labels.

For national brands, market shares declined after the publication of poor test ratings, signaling anti-consumption behavior, in the form of anti-loyalty (Iyer and Muncy 2009). This observation empirically supports

**FIGURE 2**  
*Two-Way Interaction between Brand Type and Time: Promotion Shares*

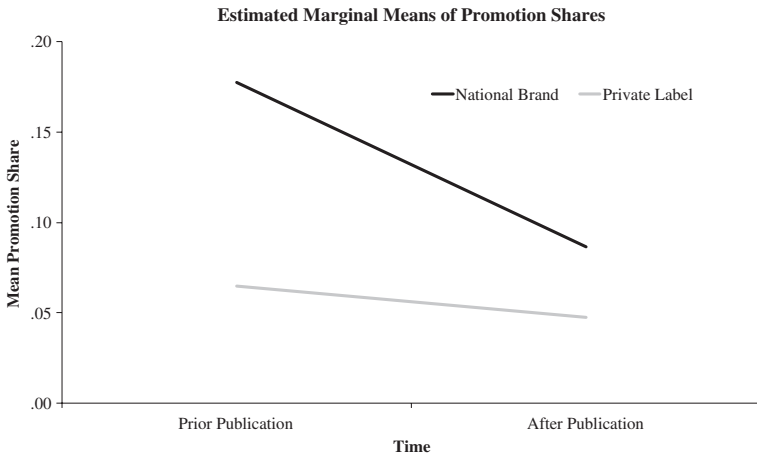
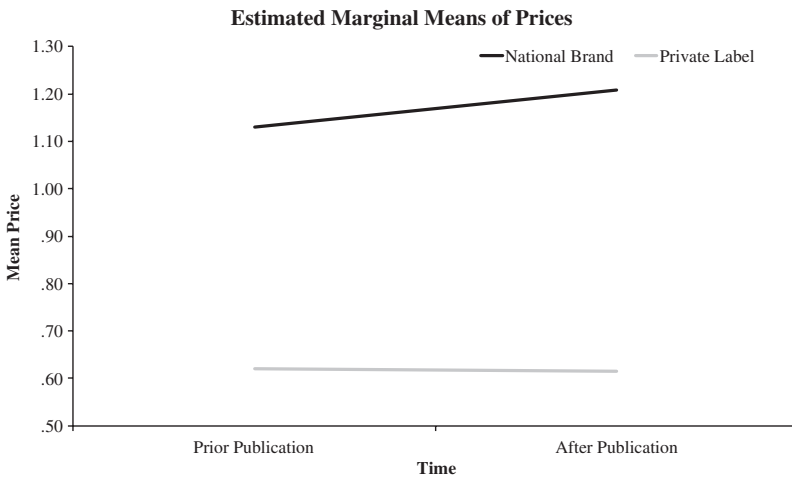


FIGURE 3  
*Two-Way Interaction between Brand Type and Time: Prices*



Lee, Conroy, and Motion's (2009) assertion that avoidance behavior relates to the increased attractiveness of competing offers. In addition, the use of price promotions declines, and average prices paid increase, following the publication of poor test rating. That is, retailers reduce the efforts they expend to sell poorly performing national brands and seem unwilling to promote them, perhaps out of fear that a poor test rating will infect consumers' perceptions of the retailer's own image. For private labels, poor test ratings lead to significant losses of market shares, yet this effect is not as strong as the one we uncovered for national brands. The use of price promotions decreases slightly (though not significantly), whereas prices remain relatively constant, in contrast with the outcomes for national brands. According to the partial eta-squared values, the effects of a poor test rating on the promotion share ( $\eta_p^2 = .002$ ) and on price ( $\eta_p^2 = .017$ ) are small.

The difference between private labels and national brands in the changes to their market shares due to poor test ratings is noteworthy. For private labels, price seems to dominate product quality in consumers' decision making. Thus, poor test ratings affect consumers' loyalty toward private labels less than toward national brands, such that many consumers continue to buy private labels, despite their poor test ratings. Our observation supports the assertion by researchers such as Richardson (1997) or Nenycz-Thiel and Romaniuk (2009) that consumers perceive private labels and national brands differently. Private labels primarily satisfy consumers'

basic utility demands, whereas national brands provide greater added value (e.g., social reputation). This added value seems more compromised by a poor test rating. However, even with their ever-increasing proliferation (Olbrich and Grewe 2013), poor test ratings for some private labels do not seem to impede the increasing market shares of such products in general.

Finally, national brands might remove products from the market after they receive poor test ratings, but private labels likely revise their products. Both reactions enhance consumer well-being, because in the long term, good products come to outnumber poor ones, suggesting that the markets work well (Geistfeld 1988). A poorly performing product invokes poor test ratings that represent expert advice, leading to anti-consumption reactions among consumers who switch to other, better-performing products.

## IMPLICATIONS

These results have important implications for manufacturers, retailers, consumers, and scholars. For manufacturers, we propose that they should consider alternatives to simply eliminating poorly performing products and the associated loss of market share. Revising the product, then communicating this effort to consumers, may reduce the manufacturer's costs and improve its brand image. Such quality improvement activities also should reduce the probability that consumers will decide to boycott a product or react with anti-consumption. Furthermore, manufacturers can achieve better balance in their power relations with retailers if their products remain available in the market (Olbrich, Grewe, and Orenstrat 2009). Manufacturers also could address the higher retail prices for their products, due to the lack of price promotions by retailers, by offering their own price promotions.

Yet manufacturers of national brands also should consider if a decline in their market share is transitory. If so, the manufacturer might resist changing the product and instead wait until the negative effects of the poor test rating no longer influence its sales. However, if a negatively rated product is crucial to its portfolio, the decline in market share appears permanent, or the product is closely connected to the manufacturer's brand equity, the company needs to revise the product and likely adjust its strategy accordingly. When the effect size ( $\eta_p^2 = .222$ ) of a poor test rating on the market share of a national brand is relatively greater, the manufacturer should consider this effect carefully when deciding on the future of the product.

Among retailers, the differentiation between national brands and private labels is critical. National brands that receive poor test ratings should not appear in the retailers' advertising campaigns, to protect their brand image, though it could result in higher average prices for consumers. If private labels invoke a poor test rating, even though price is the key determinant of consumers' buying decision, the direct relationship between the private label and the retailer's brand means that revising the product is advisable. In the process of revising or eliminating the poorly performing product, the retailer should avoid advertisements of this product and emphasize more highly rated products instead. However, the effect sizes that describe the strength of the influence of a poor test rating on market shares ( $\eta_p^2 = .084$ ), promotion shares ( $\eta_p^2 = .002$ ), and prices ( $\eta_p^2 = .017$ ) are rather small. Accordingly, a retailer might delay a decision about revising the product, in the hope that the issue will go away, with only transitory effects on sales and market shares.

We identify three main implications for consumers. First, consumers should realize that their anti-consumption and choice of other products applies pressure to both manufacturers and retailers to improve their products. Thus, anti-consumption can increase consumer well-being over time, because it signals consumers' expectations to manufacturers and retailers. By actively rejecting poorly performing products, quality-oriented consumers enhance their own quality of life. Carryover effects, perhaps through word of mouth or electronic word of mouth, could enforce such arguments and further improve the customer experience (Gligorijevic 2014).

Second, product tests help reduce quality uncertainty and support the efficient use of consumers' resources; that is, comparative product tests have positive effects on consumer well-being. As Silberer (1985) explains, the objective of product tests is to enhance market transparency by communicating product quality to consumers. Thus, they simplify the product choice process and improve decision-making quality. Furthermore, test ratings enable consumers to estimate the price-quality ratio more accurately and compare it against their individual minimum requirement. By investing purposefully in products that perform well, reducing the risk of buying a poor-performing product, and ensuring good value, consumers improve the utility of their purchases.

Third, against this background, comparative product tests drive innovation. A poor test rating causes the product to exit the market or undergo fundamental changes. Thus, a new or improved product takes the place of the poorly performing old one. Overall quality in the marketplace therefore



increases, with parallel benefits for consumer well-being. Because the reasons for consumers' initial anti-consumption become obsolete, the number of cases of observed anti-consumption should decline.

Finally, for anti-consumption scholars, this study offers a starting point from which to consider actual purchasing behavior, which would allow extended investigations of the reasons for anti-consumption and their applicability in actual purchasing behavior. Survey and interview data are restricted by their lack of reality (i.e., interviewees often cannot put their opinions in words or are influenced by social expectations). Furthermore, an interview is a special situation, causing the interviewee to issue carefully considered responses, whereas in the real world, purchases often are impulsive, nonconscious, or even irrational. For example, surveys likely would not have yielded significant differences in anti-consumption behavior toward national brands versus private labels, but by observing actual purchase behavior, in the form of household panel data, we could overcome the gaps among expressed attitudes, intentions, and behavior.

In summary, this study quantifies anti-consumption as a reaction to expert advice (i.e., poor test ratings) by analyzing household panel data. Unlike previous anti-consumption research, we do not focus on intrinsic motivations for anti-consumption but rather address actual purchasing behavior. The results suggest that consumers make efficient use of their resources by relying on test ratings and stop consuming poorly performing national brands. However, because price considerations dominate the purchase decision for private labels, anti-consumption in response to poor ratings of these products occurs to a lesser extent than it does in the case of national brands.

## LIMITATIONS AND FURTHER RESEARCH

Several limitations of this study could be addressed by additional research. First, we did not differentiate between intentional and incidental anti-consumption. Research that performs a gain-loss analysis could determine whether consumers completely stop consuming poorly rated products or switch to competing offers that perform better. Second, avoidance in response to poor test ratings may be intuitive, though the different purchasing behavior we found across brand types implies it is not. Additional research might combine quantitative and qualitative data to explicate the links among expressed attitudes, intentions, and behavior more clearly. Third, consumers rarely engage in intense processing of product-related information for low-involvement products (Laurent and

Kapferer 1985). Because our study is limited to low-involvement products, we recommend that further research compare goods or services that provoke varying levels of involvement, to test whether consumers exhibit greater anti-consumption toward poorly rated, high-involvement products. Fourth, we did not take the sociodemographic attributes of the consumers or households into consideration. By differentiating consumers as more price or quality oriented, researchers could provide a deeper understanding of their motives and potential changes in their purchasing behaviors. Fifth, the changes in the observed variables, such as market share, might be transitory, and our study is based on data about 30 products, representing 21 national brands and 9 private labels. Therefore, it seems advisable to replicate our study on a dataset that can support pre/post comparisons for a longer period of time, covers more products, or extends to other countries. Other factors that may lead to changes in market shares, promotion shares, and prices also should be taken into consideration, including distribution, new stockkeeping units, or delistings. This recommendation seems particularly advisable with regard to the somewhat low R-squared and partial eta-squared values, as a tactic to lower the unexplained variances. Sixth, we focused on “objective” quality, in terms of fitness for use, as presented by StiWa. Subjective quality also can be critical though, as manifested in a product’s design or perceived prestige attributes for example.

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