



Effects of the *truth FinishIt* brand on tobacco outcomes

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ARTICLE INFO

Keywords:

Tobacco
Smoking
Social marketing
Branding
Prevention

ABSTRACT

Since 2000, the *truth* campaign has grown as a social marketing brand. Back then, *truth* employed branding to compete directly with the tobacco industry. In 2014, the launch of *truth FinishIt* reflected changes in the brand's strategy, the tobacco control environment, and youth/young adult behavior.

Building on a previous validation study, the current study examined brand equity in *truth FinishIt*, as measured by validated multi-dimensional scales, and tobacco related attitudes, beliefs, and behavior based on two waves of the Truth Longitudinal Cohort data from 2015 and 2016. A fixed effects logistic regression was used to estimate the change in brand equity between panel survey waves 3 and 4 on past 30-day smoking among ever and current smokers. Additional models determined the effects of brand equity predicting tobacco attitudes/use at follow up among the full sample. All analyses controlled for demographic factors.

A one-point increase in the brand equity scale between the two waves was associated with a 66% greater chance of not smoking among ever smokers (OR 1.66, CI 1.11–2.48, $p < 0.05$) and an 80% greater chance of not smoking among current smokers (OR 1.80, CI 1.05–3.10, $p < 0.05$). Higher overall *truth* brand equity at wave 3 predicted less smoking at wave 4 and more positive anti-tobacco attitudes. Being male, younger, and non-white predicted some of the tobacco related attitudes.

Future research should examine long-term effects of brand equity on tobacco use and how tobacco control can optimize the use of branding in campaigns.

1. Introduction

While teen smoking of combustible cigarettes has declined over nearly two decades (Johnston et al., 2017), it remains at unacceptable levels. Tobacco use continues to be the single leading preventable cause of death in the U.S. (U.S. Department of Health and Human Services, 2014; U. S. Department of Health and Human Services, 2010; U.S. Department of Health and Human Services, 2004) As much as \$170 billion is spent per year on direct tobacco-related medical care for adults (Xu et al., 2015). In 2015, 32% of students in grades 9–12 had tried cigarette smoking (even one or two puffs) (Kann et al., 2016). Even worse, based on data from the National Youth Tobacco Surveys, in 2015, it was estimated that 4.7 million middle and high school students were current users of any tobacco product, including the > 2.3 million who used two or more tobacco products (Singh et al., 2016). If the rate of youth smoking continues at the current rate, it is projected that 5.6 million Americans younger than 18 years of age will die prematurely

from a smoking-related illness (U.S. Department of Health and Human Services, 2014). As a result, major tobacco control organizations call for interventions to eliminate teen and young adult cigarette use.

Since launching in 2000, the *truth* campaign has grown both as a public health initiative to reduce and eventually eliminate tobacco use (Farrelly et al., 2005; Davis et al., 2009; Farrelly et al., 2009), and as a social marketing brand (Schane et al., 2009). The original *truth* campaign used a “countermarketing” strategy (i.e., marketing in opposition to the tobacco industry to promote the outcome of avoiding use) and created a youth brand designed to represent an appealing alternative lifestyle to smoking, and promoted the benefits of being tobacco free (Evans et al., 2016; Allen et al., 2009). During this early period, *truth* employed branding to compete directly with tobacco products by exposing the lies and deception of the tobacco industry (Farrelly et al., 2005).

In 2015, *truth's* sponsor, the American Legacy Foundation, was renamed *Truth Initiative* (<http://truthinitiative.org/>) in order to better

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Table 1
Descriptive statistics among retention sample who participated in TLC wave 3 & wave 4 (n = 8331).

Brand equity scale	Individual brand equity items	Wave 3	Wave 4
		How much do you agree or disagree with the following?	
		% agree/strongly agree (A/SA)	% A/SA
Brand loyalty	I'd like to help truth end smoking in my generation	42.8	40.1
	I'd defend truth on social media if someone were putting it down	36.9	35.9
	I'd follow truth on social media	33.4	30.0
	I would be part of a movement to end smoking.	48.2	44.1
Leadership/popularity	Truth is helping my generation end smoking.	56.2	59.3
	Truth is for people like me	37.5	38.5
Brand personality	How much do you agree or disagree with the following? Truth is....		
	Inspired	72.6	73.0
	Powerful	67.5	67.8
	In control of their own decisions	77.4	78.1
	Independent	72.4	73.8
	Honest	75.9	77.4
	Innovative	66.1	66.4
	People that follow truth are just like me	25.4	27.9
	People that follow truth are like the friends I hang out with	26.4	28.8
	When you think of truth, you think...?		
Brand awareness	Fewer and fewer young people today smoke cigarettes	55.9	59.4
	Tobacco companies lie	71.1	71.8
	The tobacco industry tries to get young people to smoke other products like hookah	54.8	60.3
	Tobacco company ads are a joke	51.1	53.8
Tobacco attitude/use outcomes	ATS Index	3.6 SD = 0.6	3.6 SD = 0.6
	Friends would react negatively if you smoked cigarettes	73.2	74.0
	Definitely/Probably not take offered cigarette from best friend	88.7	88.8
	(Yes) Intention to smoke cigarettes OR cigars in the next year	16.2	16.2
	If smoker, want to completely stop smoking cigarettes	64.2	64.4
	Didn't smoke in last 30 days among ever smokers	66.3	67.5
Demographics	Race (% white)	66.7	
	Gender (% male)	44.8	
	Age at baseline (mean, SD)	18.1, SD = 2.1	

align the organization with its campaign and its mission to speak, seek, and spread the truth about tobacco. In these more recent years, the *truth* brand has substantially evolved, and now employs product promotions (e.g., with Vans shoes, http://www.vans.com/article_detail/vans-truth.html), has a major social media voice and a renewed focus on the current youth and young adult generation – the ‘Millennials’ – with the goal of “Finishing Tobacco” (Schane et al., 2009; Evans et al., 2016). The campaign has taken a full spectrum marketing approach (i.e., using a strategy that encompasses each dimension of the marketing mix - place, price, product, and promotion) to ultimately eliminate adolescent and young adult smoking (Evans et al., 2016).

In 2014, the latest version of the branded campaign launched *truth FinishIt* at the MTV Video Music Awards, urging 15- to 21-year olds (compared to 12–17 in the original campaign) to use their social influence to become the generation that finishes the tobacco epidemic. The emergence of *FinishIt*, and changes in the *truth* social marketing strategy, address shifts in the tobacco control environment. Smoking rates have declined overall among youth, especially among youth under 15. Estimates are that < 6% of youth regularly smoke (Johnston et al., 2017). However, as reported by the Centers for Disease Control, age of initiation has increased over time with 99% of initiation occurring by age 27 (U.S. Department of Health and Human Services, 2014). This shift in initiation may be a result of the tobacco industry targeting young adults more directly, particularly through digital marketing through social media and on mobile devices (i.e., use of Facebook ads based on recent online search related to tobacco products). These new tobacco industry marketing priorities may also be related to why some adolescents and young adults become “social smokers” (i.e., only smoke at parties or with friends) (Schane et al., 2009). The *FinishIt* campaign responded to this new marketing environment by expanding its target age range and by applying social media approaches to counter-marketing (Evans et al., 2016). *FinishIt* continues to employ branding to compete directly with these tobacco industry tactics.

Brands work as mental representations, or schema, for how

consumers perceive products or services, and whether they should invest or continue to invest in those products or services (Allen et al., 2009). In other words, brands create identities with which consumers decide to associate or not (Evans et al., 2005; Evans et al., 2015). For example, a branded health campaign can determine behavioral choice by building consumer relationships through the dissemination of branded messages that highlight the value of identifying with certain behaviors such as eating healthy, staying physically active, or quitting smoking (Evans et al., 2005). Like commercial brands, health brands such as *FinishIt* can be measured by the “brand equity” construct, a multi-dimensional scale that measures associations with the brand (i.e., beliefs about the brand, its qualities, and benefits for the individual) (Basu and Wang, 2009; Evans, 2016). Research on the early *truth* campaign produced results demonstrating the effects of brand equity on adolescent smoking behavior (Allen et al., 2009). Brand equity in *truth* mediated the effects of campaign exposure (measured by confirmed recall of campaign ads) through specific targeted attitudes about tobacco industry manipulation and a desire to remain independent of tobacco from advertising on adolescent smoking uptake. In other words, the mechanism of change in observed reductions in youth smoking was *truth* brand equity (i.e., positive mental representations of *truth*) – youth with higher brand equity were less likely to progress to established smoking (Allen et al., 2009).

Recently, this work has been extended to the new *FinishIt* campaign. Evans et al. (2016) conducted a design and feasibility study to develop a *FinishIt* brand equity scale that reflected the consumer characteristics and values of an older target audience of 15–21-year-old adolescents and young adults. The development of the updated brand equity scale included three major components: 1) Content analyze *FinishIt* mass media ads; 2) Assess *FinishIt*'s social media and follower's perceptions of its digital brand identity; 3) Develop and feasibility test the new *FinishIt* brand equity scale using data from an existing Truth Initiative media tracking study (Evans et al., 2016).

Once the scale was developed, it was added to the Truth Longitudinal

Cohort instrument; this data collection has been fielded by Truth Initiative every six months since 2014. The brand equity scale was included in both the third and fourth waves of data collection in 2015 and 2016 respectively. This study examined the relationship between brand equity in *truth FinishIt* and adolescent and young adult tobacco related attitudes, beliefs, and behaviors. The study's objectives were to:

1. Evaluate brand equity in *FinishIt* and change in brand equity between waves 3 (W3) and 4 (W4) among smokers;
2. Determine if *FinishIt* brand equity at W3 predicts smoking and tobacco related attitudes and beliefs at W4.

2. Methods

2.1. Study design

As previously reported (Evans et al., 2016), we added the final *FinishIt* brand equity scale (see Table 1) as a new module of items to the existing Truth Longitudinal Cohort study, a US nationally representative sample. See Cantrell et al. for details on the study methodology (Eisinga et al., 2013). The brand equity scale was asked of any respondent who self-reported exposure to at least recognition of the *truth* logo. (Note: The survey asked about other recognition of *FinishIt* marketing as well; logo recognition was a minimal requirement.) Respondents who affirmed recognition (asked both at W3 and W4) were asked about perceptions of the *truth* brand within four constructs: brand loyalty, leadership/popularity, brand personality, and brand awareness (individual questions and descriptive statistics for W3 and W4 are shown in Table 1). These constructs resulted both from the content analysis of all *FinishIt* mass media ads, the assessment of perceptions of truths digital brand equity, and previous studies showing that these constructs formed a higher order brand equity factor that mediated the effects of exposure to the original *truth* campaign on adolescent smoking outcomes (Evans et al., 2005).

All study procedures were reviewed and approved for human subjects research by Chesapeake Institutional Review Board (IRB; the cognizant IRB for Truth Initiative).

2.2. Sample

There were 8331 respondents who participated in waves 1, 3 and 4 of the Truth Longitudinal Cohort study. However, only those respondents who self-reported at least recognition of the *truth* logo were asked the brand equity items. Those who responded to the brand equity items in W3 (N = 5602) or W4 (N = 6184) were included in the analyses and data from Wave 1 was used for demographic information. Details on the study demographics are provided in the Results section.

2.3. Measures and instruments

The study instrument includes individual and household demographics, tobacco related attitudes and beliefs about anti-tobacco messaging, awareness of the truth logo and anti-smoking advertisements, media utilization and the household smoking environment of the respondent, and the *FinishIt* brand equity scale. This study specifically focused on the effects of brand equity on a series of attitudes/beliefs about tobacco use, and changes in those outcomes between waves 3 and 4 targeted by *FinishIt*.

2.3.1. *FinishIt* brand equity

FinishIt brand equity consists of an 18-item, multi-dimensional scale comprising four constructs: Brand loyalty, leadership/popularity, brand personality, and brand awareness. As reported elsewhere, these items were factor analyzed and resulted in four independent, first-order scales, and a higher order brand equity scale (Evans et al., 2016). See Table 1 below for the individual scale items.

2.3.2. Campaign-related attitudes

Five attitudinal constructs were assessed using several attitudinal items at W3 and W4. For each of the following items, participants were asked to what degree they agree or disagree with each statement (1 = strongly disagree, 2 = disagree, 3 = neither, 4 = agree and 5 = strongly agree).

Anti-smoking imagery included the following items 1) I would never hook up with a smoker; 2) Celebrities who smoke set a bad example; 3) When people post pictures of themselves smoking, they're encouraging others to smoke; and 4) If I smoke, I will lose respect from others my age ($\alpha_{w3} = 0.70$, $\alpha_{w4} = 0.71$).

Disapproval of social smoking included the following items 1) It's okay to smoke socially when I'm out with my friends; 2) If you only smoke when out with friends, you are not a real smoker; 3) Bumping a cigarette is a great way to start a conversation with someone; 4) People look cool when they smoke; and 5) It's not a big deal if my friends smoke ($\alpha_{w3} = 0.81$, $\alpha_{w4} = 0.81$).

Support for anti-tobacco social movement included the following items 1) I want my generation to be known as the one who ends smoking; 2) I would be part of a movement to end smoking; 3) People my age don't care about ending smoking; and 4) Taking a stand against smoking is important to me ($\alpha_{w3} = 0.83$, $\alpha_{w4} = 0.83$).

Anti-tobacco industry sentiment included the following items 1) I would like to see tobacco companies go out of business; 2) Tobacco companies make me angry; 3) Tobacco companies try to get young people to start smoking; and 4) Tobacco companies lie ($\alpha_{w3} = 0.79$, $\alpha_{w4} = 0.79$).

Independence included the following items 1) Not smoking helps me feel powerful; and 2) Not smoking tobacco is a way to show my independence ($r_{w3} = 0.58$, $r_{w4} = 0.60$) (Eisinga et al., 2013).

2.3.3. Anti-tobacco scale

A 19-item multi-dimensional anti-tobacco scale (ATS) was developed to indicate the anti-tobacco sentiment across the five above-mentioned attitudinal constructs and represent the intended short-term outcome of *FinishIt*. An average score across the five attitudinal indices (19 individual items) was calculated, and scores were dichotomized as 1 if the average was between 4 and 5 or 0 if the score was < 4.

Scales were measured on a composite score of 1–5 indicating agreement to each brand equity item, and were confirmed by factor analysis, where we modeled the variances of the latent variables. We did this knowing that the items were self-reported and that an individual might answer similarly over all the items. We also examined a second-order CFA to ensure that we had a valid ATS construct—this analysis shows that the 5 constructs loaded high on the larger ATS construct (Evans et al., 2016). Tests of interim covariance (Cronbach's Alpha) were also examined ($\alpha_{w3} = 0.89$, $\alpha_{w4} = 0.90$).

2.4. Data collection

Recruitment for the Truth Longitudinal Cohort, a custom panel implemented by GfK International, began in April of 2013. The baseline sample included approximately 14,000 respondents age 15–21, with follow-up interviews every 6 months. In addition, cross-sectional samples of approximately 1000 new respondents of the same age are added at each of the three follow up data collection periods, and followed thereafter to address attrition and other panel conditioning effects (Cantrell et al., 2017). This study was conducted on data from W3 and W4 of the Truth Longitudinal Cohort.

2.5. Survey administration

The W3 data collection was completed in November 2015, and the W4 data collection was completed in April of 2016. Recruited participants were sent an email invitation with a link to begin the survey. Each questionnaire took an average of 30 min for respondents to complete.

2.6. Statistical analysis

Previously, the research team conducted confirmatory factor analysis (CFA) on each brand equity construct, and then on a higher-level construct created from a scale variable from each brand equity item (Evans et al., 2016). As in previous research, we confirmed the presence of four factors representing brand loyalty, leadership/popularity, brand personality, and brand awareness, as well as an overall brand equity scale (combining all four factors). Factor analysis results were previously published (Evans et al., 2016). We performed a fixed effects logistic regression to estimate the effects of a change in brand equity, between panel survey waves 3 and 4 on past 30-day smoking. We then performed a logistic regression of the effects of the brand equity scale at W3 predicting tobacco attitude/use outcomes at W4. Another logistic regression was performed to determine the effects of the brand equity scale at W4 on tobacco attitude/use outcomes at W4. All models controlled for age (continuous), gender, and race/ethnicity (white or other). All variables were modeled as categorical for this analysis, except for age which was continuous. Stata version 14.1 was used in all analyses (Stata Statistical Software: Release 14.1, [computer program], 2015).

3. Results

Overall, 55% of the waves 3 and 4 sample (4594/8331) were female. The mean age was 18.1 (SD = 2.1, min = 13, max = 22) and 67% of the sample (n = 5541) was white. Approximately 30% of the sample indicated they were ever smokers at W3 and 32% at W4. Table 1 summarizes the descriptive statistics collected at baseline for the two-wave sample. In the following tables, the total observations vary depending on the question asked.

Next, we estimated a fixed effects logistic regression model to estimate the effects of a change in brand equity, both in the four brand equity construct scales and the overall brand equity scale, between panel survey waves 3 and 4 on past 30 days smoking among ever smokers. As noted earlier, this model reflects the hypothesis that changes in brand equity over time may predict tobacco use behavior at a later time point. We found one statistically significant effect within the four constructs. A one-point change (i.e., an increase between agree and strongly agree) in the Leaderships Scale between W3 and W4 was associated with a 68% greater chance of not smoking in the past 30 days among current smokers. Moreover, a one-point change in the overall brand equity scale between W3 and W4 was associated with a 66% greater chance of not smoking among ever smokers (OR 1.66, CI 1.11–2.48, $p < 0.05$) and an 80% greater chance of not smoking in the past 30 days among current smokers at W4 (OR 1.80, CI 1.05–3.10, $p < 0.05$). Table 2 summarizes these results.

Next we estimated a second pair of logistic regression models (Table 3). Each of the tobacco attitudes, beliefs and behaviors measured in the Truth Longitudinal Cohort at W4 were regressed on brand equity at W3. As noted earlier, this model reflects the hypothesis that a specific level of brand equity at an earlier time may predict tobacco attitudinal/behavioral outcomes at a later time point. We found that only one of the brand equity constructs predicted self-reported smoking at W4. The brand loyalty scale at W3 was significantly associated with all anti-tobacco attitudes and intentions, as well as with 41% greater odds of no self-reported smoking at W4 (OR 1.41, CI 1.17–1.69, $p < 0.01$). The brand personality and brand awareness scales at W3 were associated with higher anti-tobacco sentiment and higher perceived disapproval of smoking by friends; the brand awareness scale at W3 was also associated with lower odds to intend to smoke cigarettes and cigars. Age was also significantly associated with most of the tobacco use attitudes and intentions and with 7% greater odds of no self-reported smoking at W4 (OR 1.07, CI 1.02–1.12, $p < 0.01$).

In a second model, we regressed the overall brand equity scale on these same outcomes. Brand equity was associated with all of the

Table 2

Logistic regression: wave 4 cigarette use among smokers on wave 3–4 change in brand equity.

Variables	Didn't smoke in last 30 days OR (95% confidence interval)	
	Ever smokers (n = 323)	Current smokers (n = 185)
Model 1		
Change in brand loyalty	1.26 (0.85, 1.88)	0.85 (0.50, 1.45)
Change in leadership scale	1.27 (0.90, 1.79)	1.68** (1.07, 2.64)
Change in personality scale	1.21 (0.84, 1.74)	0.97 (0.61, 1.54)
Change in brand awareness	0.82 (0.59, 1.14)	1.17 (0.74, 1.87)
Model 2		
Change in overall brand equity scale	1.66** (1.11, 2.48)	1.80** (1.05, 3.10)

Note. Boldface indicates statistical significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

measured tobacco use attitudes and intentions at W4, with a highly significant positive association with the ATS Index at W4 (OR 7.01, CI 6.08–8.09, $p < 0.01$). Brand equity was also associated with 40% greater odds of no self-reported smoking at W4 (OR 1.40, CI 1.20–1.63, $p < 0.01$). We also found associations between gender, age, and race and some tobacco use attitudes and intentions.

Finally, we estimated a third set of logistic regression models in which each of the tobacco use attitudes and smoking behavior outcomes measured in the Truth Longitudinal Cohort were regressed on brand equity at W4 (Table 4). Again, we constructed two sets of models: 1) for the individual brand equity construct scales, and 2) for the overall brand equity factor. These models reflect the hypothesis that a specific level of brand equity at a specific time point may be associated with tobacco attitudinal/behavioral outcomes at that time point, as observed in the previous *truth* brand equity study (Evans et al., 2016).

4. Discussion

The *truth* campaign has demonstrated that branding is an effective countermarketing strategy to reduce youth and young adult tobacco use (Evans et al., 2005). The *FinishIt* brand equity scale has been shown to predict youth and young adult smoking related attitudes, beliefs, and behavior (Evans et al., 2016). However, to date this is the first study to examine the longitudinal effects of *FinishIt* brand exposure over a 6-month timeframe on youth and young adult tobacco use outcomes. Based on a longitudinal US nationally representative address based sample, this study shows that brand equity in *FinishIt* predicts increased anti-tobacco attitudes and reduced tobacco use behavior over time (at six months).

Specifically, we found consistent positive effects for the overall brand equity scale on self-reported past 30-day smoking, and on tobacco related attitudes targeted by the *FinishIt* campaign as part of its countermarketing strategy. Among smokers, an increase in the overall *truth* brand equity over time predicts reduced self-reported 30-day smoking 6 months later. Additionally, higher overall *FinishIt* brand equity at an earlier time point (W3) predicts later reduced smoking (W4) and more positive attitudes. Consistent with our previous study of *FinishIt* brand equity, we again found that contemporaneous higher brand equity (W4) predicts lower levels of smoking and more positive attitudes (W4) (Evans et al., 2016).

Results from the individual brand equity construct scales were mixed, but generally showed positive effects on tobacco related attitudes. In particular, the W4 only analysis (see Table 4) demonstrated the strongest associations between the brand loyalty and leadership/popularity scale, both of which were associated with all of the tobacco related attitudes measured in the study. Messages specifically designed to promote brand loyalty and the sense that *FinishIt* is a leading youth and young adult brand may be important strategies to increase the effectiveness of the campaign in reducing tobacco use in the future.

Table 3
Logistic regression: wave 4 tobacco attitude/use outcomes on wave 3 brand equity.

Variables	Anti-tobacco sentiment (n = 5482)	Friends would react negatively if you smoked cigarettes (n = 5473)	Definitely/probably not take offered cigarette from best friend (n = 5482)	(Yes) Intention to smoke cigarettes and cigars (n = 5482)	If smoker, want to completely stop smoking cigarettes (n = 638)	Didn't smoke in last 30 days (n = 1924)
Model 1: first-order brand equity scales						
Wave 3 brand loyalty scale	3.04*** (2.64, 3.50)	1.61*** (1.43, 1.82)	2.17*** (1.85, 2.54)	0.51*** (0.45, 0.59)	1.55*** (1.13, 2.11)	1.41*** (1.17, 1.69)
Wave 3 brand leadership scale	0.95 (0.83, 1.09)	0.94 (0.83, 1.06)	0.91 (0.78, 1.07)	1.05 (0.91, 1.21)	1.11 (0.82, 1.50)	0.89 (0.74, 1.09)
Wave 3 brand personality scale	1.48*** (1.27, 1.73)	1.15*** (1.01, 1.32)	1.09 (0.92, 1.29)	0.95 (0.82, 1.10)	0.93 (0.66, 1.29)	1.00 (0.82, 1.22)
Wave 3 brand awareness scale	1.70*** (1.52, 1.91)	1.22*** (1.10, 1.36)	1.11 (0.97, 1.27)	0.87** (0.77, 0.98)	1.07 (0.83, 1.37)	1.12 (0.96, 1.31)
Gender (female = ref)	0.72*** (0.63, 0.82)	0.67*** (0.59, 0.76)	0.97 (0.82, 1.15)	1.38*** (1.19, 1.59)	1.16 (0.83, 1.64)	0.90 (0.74, 1.09)
Race (white = ref)	0.96 (0.84, 1.10)	0.72** (0.64, 0.82)	1.00 (0.84, 1.20)	0.99 (0.85, 1.15)	1.46** (1.02, 2.11)	1.06 (0.87, 1.29)
Age (cont)	0.95*** (0.93, 0.98)	0.94*** (0.92, 0.97)	0.95** (0.91, 0.99)	1.09*** (1.05, 1.13)	1.05 (0.67, 1.15)	1.07*** (1.02, 1.12)
Model 2: higher-order brand equity scale						
Wave 3 overall brand equity scale	7.01*** (6.08, 8.09)	2.11*** (1.90, 2.35)	2.46*** (2.16, 2.82)	0.43*** (0.39, 0.49)	1.80*** (1.40, 2.31)	1.40*** (1.20, 1.63)
Gender (female = reference group)	0.70*** (0.61, 0.80)	0.66*** (0.58, 0.74)	0.94 (0.80, 1.11)	1.40*** (1.22, 1.62)	1.17 (0.83, 1.64)	0.89 (0.73, 1.08)
Race (white = ref)	0.97 (0.85, 1.11)	0.93*** (0.64, 0.83)	1.01 (0.85, 1.21)	0.98 (0.85, 1.14)	1.49** (1.04, 2.15)	1.06 (0.87, 1.30)
Age	0.95*** (0.92, 0.98)	0.94*** (0.91, 0.97)	0.94*** (0.91, 0.98)	1.10*** (1.06, 1.13)	1.05 (0.97, 1.14)	1.07*** (1.02, 1.12)

Note. Boldface indicates statistical significance: *p < 0.10, **p < 0.05, ***p < 0.01.

Table 4
Logistic regression: tobacco attitude/use outcomes on brand equity at wave 4.

Variables	Anti-tobacco sentiment (n = 6067)	Friends would react negatively if you smoked cigarettes (n = 6051)	Definitely/probably not take offered cigarette from best friend (n = 6067)	(Yes) Intention to smoke cigarettes and cigars (n = 6067)	If smoker, want to completely stop smoking cigarettes (n = 677)	Didn't smoke in last 30 days (n = 2024)
Model 1: first order brand equity scales						
Wave 4 brand loyalty scale	4.27*** (3.67, 4.96)	1.49*** (1.33, 1.68)	2.04*** (1.75, 2.38)	0.54*** (0.47, 0.62)	2.05*** (1.48, 2.83)	1.32*** (1.09, 1.59)
Wave 4 brand leadership scale	0.89 (0.77, 1.03)	1.03 (0.91, 1.16)	0.87* (0.74, 1.01)	1.00 (0.87, 1.14)	0.78 (0.57, 1.07)	0.95 (0.78, 1.14)
Wave 4 brand personality scale	2.17*** (1.85, 2.55)	1.26*** (1.11, 1.43)	1.36*** (1.15, 1.60)	0.82*** (0.71, 0.94)	1.23 (0.88, 1.72)	1.23*** (1.02, 1.50)
Wave 4 brand awareness scale	2.35*** (2.08, 2.65)	1.30*** (1.17, 1.44)	1.18** (1.04, 1.35)	0.89** (0.79, 1.00)	1.08 (0.83, 1.39)	1.05 (0.91, 1.22)
Gender (female = ref)	0.73*** (0.64, 0.84)	0.66*** (0.59, 0.75)	0.97 (0.83, 1.14)	1.35*** (1.18, 1.56)	1.12 (0.80, 1.57)	0.91 (0.75, 1.10)
Race (white = ref)	0.89 (0.77, 1.03)	0.71*** (0.63, 0.80)	0.92 (0.77, 1.08)	1.07 (0.92, 1.23)	1.21 (0.85, 1.73)	0.98 (0.81, 1.20)
Age	0.96** (0.93, 0.99)	0.93*** (0.90, 0.96)	0.94*** (0.90, 0.97)	1.10*** (1.07, 1.14)	1.04 (0.95, 0.13)	1.07*** (1.02, 1.12)
Model 2: higher-order brand equity scale						
Wave 4 overall brand equity scale	17.39*** (14.73, 20.52)	2.46*** (2.22, 2.73)	2.80*** (2.45, 3.19)	0.38*** (0.34, 0.43)	2.09*** (1.61, 2.73)	1.63*** (1.40, 1.90)
Gender (female = ref)	0.70*** (0.61, 0.80)	0.65*** (0.58, 0.74)	0.94 (0.80, 1.10)	1.38*** (1.20, 1.59)	1.12 (0.80, 1.55)	0.90 (0.75, 1.09)
Race (white = ref)	0.91 (0.79, 1.04)	0.72*** (0.63, 0.81)	0.94 (0.80, 1.11)	1.05 (0.91, 1.21)	1.22 (0.86, 1.74)	0.99 (0.82, 1.21)
Age (cont)	0.96*** (0.93, 0.99)	0.93*** (0.90, 0.95)	0.93*** (0.89, 0.97)	1.11*** (1.07, 1.15)	1.03 (0.95, 1.12)	1.06** (1.01, 1.11)

Note. Boldface indicates statistical significance: *p < 0.10, **p < 0.05, ***p < 0.01.

These results build on the growing literature on health branding and its role as a strategy for behavior change and social marketing campaigns (Evans et al., 2005). While previous studies have demonstrated associations between branding and tobacco related outcomes, only a few studies have examined longitudinal effects (Evans et al., 2007). This study demonstrates the effectiveness of brand equity in reducing self-reported tobacco use and in improving targeted anti-tobacco and related attitudes. Our results suggest that building brand equity should be a target specifically for countermarketing campaigns, and generally for tobacco control programs seeking to change anti-tobacco attitudes.

4.1. Limitations

This study has some limitations. First, we did not have any kind of experimental comparison, a brand exposure versus no brand exposure analysis. Thus, we are limited to examining the effects of levels of brand equity in a population-based sample. Second, we had no form of validation of self-reported smoking. It is possible that exposure to the *FinishIt* campaign, and potentially other media or other environmental exposure, may have produced a social desirability bias to deny recent smoking (Paulhus, 1991). The current study cannot isolate those possible effects. Finally, we note that the study was not designed to assess (nor was *FinishIt* to influence) differential effects of the brand on different racial/ethnic groups. These should be the subject of future campaigns and studies.

5. Conclusions

Future research should build on these results in at least two ways. First, study participants should be followed over extended periods of time (greater than six months tracked in the current study) to examine the persistence of brand equity effects. It is important to know whether brand equity effects wear out over time. The question arises: “What factors are associated with persistence and wear out?”

Second, in the current tobacco control landscape where there are multiple branded campaigns – the Food and Drug Administration *Real Cost*, the Centers for Disease Control and Prevention (CDC) *TIPS*, and *FinishIt* – it is important to understand brands within categories and competition between socially marketed brands. There has been very limited research in this area (Wakefield et al., 2006). Having established the importance of brand equity in reducing smoking and improving anti-tobacco attitudes, the next question is how the field of tobacco control can optimize its use of this effective strategy.

Acknowledgments

The authors confirm that they have no competing interests. This study was sponsored by funding from the Truth Initiative. The content of this manuscript is solely the responsibility of the authors and does not necessarily represent the official views of the Truth Initiative.

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