The Attitude–Behavior Relationship in Consumer Conduct: The Role of Norms, Past Behavior, and Self-Identity

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ABSTRACT. The authors used a revised planned behavior model in the consumer domain. The revised model incorporated separate measures of descriptive and injunctive/prescriptive norms, self-identity, and past behavior in an effort to improve the predictive power of the theory of planned behavior (TPB; I. Ajzen, 1985) in relation to a self-reported consumer behavior: purchasing one’s preferred soft drink. At Time 1, respondents (*N* = 112) completed self-report measures of (a) attitudes, (b) perceived behavioral control, (c) descriptive and injunctive/prescriptive norms, (d) self-identity, (e) past behavior, and (f) intentions. The authors assessed self-reported behavior 1 week later (Time 2). Attitudes, injunctive/prescriptive norms, descriptive norms, past behavior, and self-identity were all positively related to purchase intentions, and intentions were predictive of self-reported behavior at Time 2. These findings highlight the utility of the TPB in the consumer domain.

Keywords: attitude–behavior relations, norms, self-identity, theory of planned behavior
EVERY DAY, INDIVIDUALS ARE PRESENTED with countless opportunities to purchase and consume, both to satisfy their physical needs and to express their identity and values. Researchers across a range of disciplines have attempted to understand consumer behavior, and a variety of accounts have been advanced. Researchers have focused on the effects of marketing variables, studying the influence of external stimuli (e.g., advertising, product placement, direct selling) on purchasing decisions and on how individuals evaluate and compare products (i.e., attitudes), and looking at how evaluations are translated into consumer behavior.

To account for the processes by which consumer attitudes are translated into consumer behavior, researchers have turned to social psychological research on attitudes and the attitude–behavior relationship. Some researchers have examined aspects of the consumer (e.g., involvement; Swinyard, 1993), whereas others have focused on the effects of social factors, such as reference groups, on consumer choice (e.g., White & Dahl, 2006). Some researchers have focused on the distinction between explicit and implicit consumer preferences and how these preferences interact to influence consumer choice (e.g., Friese, Wanke, & Plessner, 2006) or on the relative impact of affective versus cognitive aspects of consumer preferences on consumer choice (e.g., Scarabis, Florack, & Gosejohann, 2006). Last, researchers have drawn on dominant models of the attitude–behavior relationship, namely the theory of planned behavior (TPB; Ajzen, 1985), to explain consumer behavior. In the present research, we investigated the ability of the TPB to predict both behavioral intentions and self-reported behavior in relation to the consumption of preferred brands of soft drink.

The Theory of Planned Behavior

The TPB (Ajzen, 1985) is one of the most influential and well-supported social psychological theories for predicting human behavior. The central premise of the theory is that behavioral decisions are not made spontaneously but are the result of a reasoned process in which behavior is influenced, albeit indirectly, by attitudes, norms, and perceptions of control over the behavior. The model proposes that attitude (i.e., the evaluation of the target behavior), subjective norms (i.e., perceived social pressure regarding performance of the behavior), and perceived behavioral control (PBC; i.e., perceived control over performance of the behavior) influence behavior primarily through their impact on behavioral intention. Hence, intention is seen as the proximal determinant of behavior. PBC is thought to have both a direct effect on behavior and an indirect effect via intention.

More than two decades of research using the theories of reasoned action and planned behavior have provided extensive support for the models (see Armitage & Conner, 2001, for a review). Moreover, the predictive ability of these models has been demonstrated across a range of consumer domains, including food choices.
intentions to purchase environmentally friendly products (Kalafatis, Pollard, East, & Tsogas, 1999) and luxury items such as watches and mobile phones (Mannetti, Pierro, & Livi, 2002), intentions to purchase celebrity merchandise (Chiou, Huang, & Chuang, 2005), intentions to engage in customer dissatisfaction responses (Cheng, Lam, & Hsu, 2005), intentions to use e-coupons (Kang, Hahn, Fortin, Hyun, & Eom, 2006), and even intentions to shoplift (Tonglet, 2002). Indeed, marketing psychologists have noted that the TPB is a useful framework not only for understanding consumer conduct but also for influencing it (e.g., Bansal & Taylor, 1999; Fortin, 2000).

A Revised Normative Component in Consumer Conduct

Despite general support for the TPB, there has been notably less support for the role of normative factors in attitude–behavior relations. Meta-analyses, collapsing research across behavioral domains and populations, have consistently suggested that the predictive ability of the subjective norm construct is limited (e.g., Armitage & Conner, 2001). The apparent weakness of the norm–intention link has prompted a number of reactions, from Ajzen’s (1991) conclusion that personal factors (i.e., attitude, perceived behavioral control) are the primary determinants of behavioral intentions, to the deliberate removal of subjective norms from data analysis (e.g., Sparks, Shepherd, Wieringa, & Zimmermanns, 1995).

The findings with respect to the norm–intention link could indeed reflect the lesser importance of norms as determinants of intentions and behavior. An alternate conclusion, however, is that norms are important but need to be conceptualized in a manner different than that embodied by the subjective norm construct. A number of researchers have proposed revisions to the normative component of the TPB to clarify the role of norms in the attitude–behavior context (e.g., Cialdini, Kallgren, & Reno, 1991; Terry & Hogg, 1996).

Rather than seeing norms as a unitary construct, Cialdini et al. (1991) argued that the common definition of norms reflects conceptions of what significant others think a person should do and what significant others themselves do. Injunctive norms reflect perceptions of what significant others think one ought to do. The subjective norm component of the TPB is an injunctive norm because it is concerned with perceived social pressures from significant others to perform the behavior. Injunctive norms motivate action by highlighting the potential social rewards and punishments for engagement or nonengagement in the behavior. In contrast, descriptive norms reflect the perception of whether other people perform the behavior in question. Descriptive norms describe what is typical or normal and motivate action by providing evidence as to what type of behavior is likely to be effective, adaptive, and appropriate.

The distinction between descriptive and injunctive norms has been adopted in TPB studies in a number of behavioral domains (e.g., Conner & McMillan, 1999;
McMillan & Conner, 2003; Warburton & Terry, 2000). In most studies, descriptive norms contributed to the prediction of intentions independently of injunctive norms, thereby improving the explanatory power of the model (cf. Povey, Conner, Sparks, James, & Shepherd, 2000). In a recent meta-analysis, Rivis and Sheeran (2003) found that the inclusion of descriptive norms explained an additional 5% of the variance in intentions. Moreover, the beta weight for descriptive norms ($\beta = .24$) was higher than that for injunctive norms ($\beta = .16$) and PBC ($\beta = .11$) and was surpassed only by the beta for attitudes ($\beta = .40$). Thus, there is empirical evidence to support the inclusion of descriptive norms in the TPB.

The utility of the distinction between descriptive and injunctive norms and the relative predictive power of each type of norm have not been examined in the consumer domain. However, it is important to investigate this issue for both theoretical and practical reasons. First, such research would add to a growing body of literature focused on theoretical expansion of the role of norms in attitude–behavior relations. Second, awareness of the relative importance of descriptive and injunctive social norms would be useful in applied contexts, highlighting possible avenues for interventions and behavior change. In the present research, we investigated the relative predictive power of descriptive and injunctive norms in relation to self-reported intentions to purchase preferred brands of soft drink.

The Role of Self-Identity and Past Behavior in Consumer Conduct

In addition to examining the utility of the distinction between injunctive and descriptive norms in the consumer behavior domain, we tested the impact of two additional variables that have been identified as useful additions to the TPB: self-identity and past behavior.

**Self-identity.** Within both the sociological and psychological literatures, a person’s self-identity has been viewed as an important determinant of behavior. **Self-identity** is the salient part of an actor’s self that relates to a particular behavior and reflects the “labels people use to describe themselves” (Biddle, Bank, & Slavings, 1987, p. 326). Several researchers have addressed the extent to which self-identity might be a useful addition to the TPB (e.g., Charng, Piliavin, & Callero, 1988; Cook et al., 2002; Terry, Hogg, & White, 1999). On the basis of past research, Conner and Armitage (1998) argued that it is reasonable to assume that there are certain behaviors for which self-identity is an important determinant of intentions. One domain in which self-identity might play an important role is that of consumer behavior.

Consumer behavior has a symbolic meaning beyond its practical and objective features and consequences—it is associated with idealized people (Wright, Claiborne, & Sirgy, 1992) and can be used to communicate information about consumers (Dittmar, 1992), their personal values (Dibley & Baker, 2001), and their self-identity (Piacentini & Mailer, 2004). Consumption can function to establish
and bolster a sense of identity and to express differences between social groups (Bourdieu, 1984; Fischler, 1988), a notion reflected in the popular adage that “you are what you eat.” For example, the soft drink Coke is associated, though advertising, with the kind of person who is young, attractive, and socially outgoing. As a result, a person who aspires to this ideal may see him- or herself as a typical consumer of Coke and be more likely to consume Coke. Thus, self-identity, defined in this context as the extent to which an individual sees him- or herself as a typical consumer of a product, may play a role in the consumer context.

Researchers have extensively examined the role of self-identity in applications of the TPB to consumer intentions, particularly in the area of food choice. For example, self-identity predicts intentions to consume organically grown vegetables (Sparks & Shepherd, 1992) and intentions to consume a range of healthy and unhealthy foods (Dennison & Shepherd, 1995; Sparks & Guthrie, 1998). Moreover, self-identity has been found to predict intentions to engage in behaviors that are performed relatively infrequently (e.g., consumption of luxury goods; Mannetti et al., 2002) and those performed relatively frequently (e.g., food choices; Dennison & Shepherd, 1995).

However, it is important to note that past research on the effects of self-identity for repetitive consumer behaviors has tended to focus on target behaviors that can be interpreted as having a moral component, such as eating healthy foods or avoiding high-fat foods (Sparks, 2000; cf. Sparks & Guthrie, 1998, for evidence of independent effects of self-identity after controlling for moral obligation). In the present research, we investigated a frequently performed consumer behavior—the consumption of a preferred brand of soft drink—but did not make reference to the health status of the soft drinks. By doing so, our research contributes to extant knowledge about the range of consumer behaviors for which self-identity is a useful addition to the TPB.

Past behavior. Although several additions to the TPB have been proposed, the strongest evidence is associated with the role of past behavior. Sutton (1994) argued that, with repeated performance, behaviors might become determined by one’s past behavior rather than by cognitions such as those described in the TPB model. Several researchers have found that self-reported past behavior is a useful addition to the TPB across a range of behavioral domains (e.g., Conner, Warren, Close, & Sparks, 1999; Hagger, Chatzisarantis, & Biddle, 2002; Norman & Conner, 2006) and is often the strongest predictor of self-reported intentions and behavior, explaining variance over and above that accounted for by the original TPB (e.g., Conner & Armitage, 1998; Ouellette & Wood, 1998). For example, Conner and Armitage (1998) reported that the inclusion of a measure of past behavior in the TPB explained, on average, an additional 7% of variance in intentions and 13% of variance in behavior.

Researchers have argued that it is important to consider the role of past behavior when the behavior in question is performed repeatedly (e.g., Bamberg,
Ajzen, & Schmidt, 2003) because past behavior is a stronger predictor of future actions for frequently performed behaviors than for infrequently performed behaviors (Ouellette & Wood, 1998). Given that consumer behaviors such as food purchase decisions are repeated frequently and that past research has highlighted the role of past behavior in consumer contexts (e.g., Astrom, 2004; Cheng et al., 2005; Masalu & Astrom, 2001), it is important to demonstrate that the effect of the constructs outlined in the TPB emerge even when the effects of self-reported past behavior are controlled. In the present study, we examined the effects of self-reported past behavior on both consumption intentions and self-reported consumption behavior.

**The Present Research**

The TPB is the dominant theoretical model in the attitude–behavior context, and decades of research and countless empirical tests testify to its explanatory power. Nevertheless, given increased interest in the application of the TPB to consumer behavior and continued interest in the TPB within the attitude–behavior field more generally, it is still important to test the predictive power of the standard model and to investigate how the explanatory power of the model can be increased. In the present research, we examined the ability of the TPB to predict purchase behavior in relation to soft drink brands and, more critically, tested the utility of a revised normative component, in which a distinction between injunctive and descriptive norms was made in the consumer domain. We also examined the roles of self-reported past behavior and self-identity.

The present study was an exploratory test of the application of the TPB to understanding consumer behavior in relation to brands of soft drink. We chose soft drinks as the target product for a number of reasons. First, soft drink consumption is a behavior that is performed frequently and is reasonably easy to perform. In this way, it can be distinguished from many of the other behaviors used in TPB tests, which have tended to use behaviors that are more involving or difficult to perform or that are performed infrequently (Kalafatis et al., 1999; Mannetti et al., 2002). Second, to demonstrate fully the utility of the TPB in consumer conduct and to identify potential boundary conditions on the model, it is important to test the predictive power of the model with behaviors that vary along the continuum in terms of variables such as degree of volitional control, habit strength, and normative pressure. Last, purchasing behavior in relation to soft drinks has not been examined from the perspective of the TPB, and the current test will contribute to the body of evidence for the predictions specified in the model.

On the basis of the TPB and past research, we made the following hypotheses:

**Hypothesis 1 (H1):** Attitudes, injunctive norms, and PBC will all be related positively to purchase intentions. Self-reported intentions to purchase one’s preferred soft drink will increase as attitudes toward the behavior become
more positive \((H_{1a})\), as injunctive norms become more supportive of the behavior \((H_{1b})\), and as perceived control over the behavior increases \((H_{1c})\).

\(H_2\): Descriptive norms will account for additional variance in intention and will be related positively to purchase intentions. Even after controlling for the effects of attitudes, injunctive norms, and PBC, descriptive norms will predict self-reported purchase intentions \((H_{2a})\). Furthermore, as descriptive norms become more supportive of the behavior, intentions to purchase one’s preferred soft drink will also increase \((H_{2b})\).

\(H_3\): Self-reported past behavior and self-identity will account for additional variance in intention and will be related positively to purchase intentions. Even after controlling for the effects of attitudes, injunctive norms, PBC, and descriptive norms, self-reported past behavior and self-identity will contribute to the prediction of behavioral intentions \((H_{3a})\). Furthermore, respondents who report higher levels of purchase behavior in the past will be more likely to intend to purchase their preferred brand of soft drink in the next week \((H_{3b})\). Respondents who report that being a purchaser of their preferred soft drink is part of their identity will report stronger purchase intentions \((H_{3c})\).

\(H_4\): Intentions and PBC will predict self-reported behavior. Stronger intentions to purchase one’s preferred soft drink at time of the initial survey \((Time\ 1)\) will be associated with higher levels of self-reported purchase behavior at the follow-up survey \((Time\ 2;\ H_{4a})\). Similarly, higher levels of PBC at Time 1 will be associated with higher levels of self-reported purchase behavior at Time 2 \((H_{4b})\).

\(H_5\): Self-reported past behavior will predict self-reported behavior at Time 2. Respondents who reported high levels of past purchase behavior will be more likely to report high levels of purchase behavior at Time 2 \((H_{5a})\), even after controlling for the effects of behavioral intention and PBC \((H_{5b})\).

**Method**

_Elicitation Study_

Prior to the main study, we conducted an elicitation study on a small sample of respondents to develop the belief-based measures \((Ajzen,\ 2002)\). The pilot survey was administered to a sample of 21 introductory psychology students (12 women, 9 men; \(M_{age} = 18.95\) years, \(SD_{age} = 4.06\)). We asked respondents to answer a series of open-ended questions that asked them to list (a) the advantages and disadvantages of buying their preferred soft drink, (b) the individuals or groups who would approve or disapprove of their buying their preferred soft drink, and (c) the circumstances that might prevent or discourage them from buying their preferred soft drink. We used the modal responses to create the items for the belief-based measurement of the TPB constructs in the main study.
Main Study Respondents and Design

Participants in the main study were 112 university students (43 men, 69 women) who participated in the study in exchange for course credit. The age range of the respondents was 17–26 years (\(M = 18.33\) years, \(SD = 1.89\) years). The present research was longitudinal in design: Respondents completed two surveys on consumer behavior (i.e., buying one’s preferred soft drink) at two different times. At Time 1, respondents completed a survey assessing (a) self-reported attitude, (b) descriptive norms, (c) injunctive norms, (d) PBC, (e) past behavior, (f) self-identity, and (g) intention. One week later (Time 2), we assessed participants’ self-reported consumption behavior.

Measures

All constructs, with the exception of past behavior, were measured with multi-item scales. All questions were constructed in accordance with the recommendations of Ajzen (2002). To reduce the effects of response bias, each of the measures included several negatively worded items, which we reverse scored prior to scale construction. Items were ordered in a nonsystematic manner throughout the survey. Prior to completing the survey, respondents were asked to think about the major soft drink brands available and to list their preferred brand. Throughout the remainder of the survey, respondents were asked to answer the questions with this brand in mind.

Intention. Strength of respondents’ intentions to consume their preferred soft drink was assessed with three items: (a) “I do not intend/do intend to buy my preferred soft drink during the next week”; (b) “I intend to buy my preferred soft drink during the next week”; and (c) “Do you intend to buy your preferred soft drink during the next week?” Participants rated all items on a 7-point scale ranging from 1 (definitely intend not to) to 7 (definitely intend to), with one item reverse scored. We averaged responses to create an index of behavioral intention (\(\alpha = .94\)).

Attitude. The direct measure of attitude was assessed with seven semantic differential scales: (a) unpleasant–pleasant, (b) bad–good, (c) negative–positive, (d) favorable–unfavorable, (e) wise–foolish, (f) unenjoyable–enjoyable, and (g) satisfying–unsatisfying. Participants gave their responses on 7-point scales with the scale anchors represented by the adjective terms (e.g., 1 = unpleasant, 7 = pleasant), and items were scored such that higher scores indicated a more positive attitude to buying one’s preferred soft drink (\(\alpha = .86\)).

The indirect (belief-based) measure of attitude was computed as the sum of the products of scores on the behavioral beliefs and outcome evaluations. We assessed behavioral beliefs with seven items selected on the basis of an elicitation
study: (a) tastes good, (b) unhealthy, (c) always available, (d) full of sugar, (e) high quality, (f) not Australian, and (g) refreshing. We asked respondents to rate the likelihood that each of the seven costs and benefits would be an outcome of consumption of their preferred soft drink on a 7-point scale ranging from 1 (extremely unlikely) to 7 (extremely likely). We assessed outcome evaluations by asking respondents to rate the pleasantness of each of the seven consequences on a 7-point scale ranging from 1 (extremely unpleasant) to 7 (extremely pleasant).

**Norms.** We assessed both descriptive and injunctive norms. We assessed descriptive norms with three items: (a) “How many of the people who are important to you would buy the soft drink you prefer during the next week?” (rated from 1 [none] to 7 [all]); (b) “How likely is it that people who are important to you buy your preferred soft drink?” (rated from 1 [extremely unlikely] to 7 [extremely likely]); and (c) “What percentage of the people who are important to you buy your preferred soft drink?” (rated from 1 [none] to 7 [all]). Four items measured injunctive norms: (a) “Do the people who are important to you approve or disapprove of buying the soft drink you prefer?” (rated from 1 [approve] to 7 [disapprove]); (b) “Most people who are important to me think that my buying my preferred soft drink during the next week would be . . .” (rated from 1 [undesirable] to 7 [desirable]); (c) “If I buy my preferred soft drink during the next week, most people who are important to me would . . .” (rated from 1 [approve] to 7 [disapprove]); and (d) “Among the people who are important to you, how much agreement would there be that buying the soft drink you prefer is a good thing to do?” (rated from 1 [a great deal] to 7 [not at all]). We averaged responses to create indexes of descriptive norms (α = .77) and injunctive norms (α = .79), with high scores indicating greater perceived normative support for consumption. We did not assess subjective norm in the present study because of the overlap between subjective and injunctive norms.

An indirect measure of norms was also computed by summing the product of scores on the normative beliefs and the motivation to comply. On the basis of the pilot study, we selected six referents: (a) parents, (b) siblings, (c) other relatives, (d) partner, (e) friends and peers, and (f) students. To assess normative beliefs, we asked respondents to rate how likely it was that each of the referents would think that they should buy their preferred soft drink, on a 7-point scale ranging from 1 (extremely unlikely) to 7 (extremely likely). We assessed motivation to comply by asking respondents to report how willing they were to do what each of the referents wanted on a 7-point scale from 1 (not at all) to 7 (very much).

**Perceived behavioral control.** We assessed perceptions of control over consumption with three items: (a) “If I wanted to, it would be easy for me to buy my preferred soft drink during the next week” (rated from 1 [strongly disagree] to 7 [strongly agree]); (b) “How confident are you that you will be able to buy your preferred soft drink during the next week?” (rated from 1 [not at all confident]
to 7 [extremely confident]); and (c) “For me, to buy my preferred soft drink during the next week would be . . .” (rated from 1 [very easy] to 7 [very difficult]). Higher scores on each item indicated greater perceived control over consumption ($\alpha = .75$).

The indirect measure of PBC was computed as the sum of the products of control beliefs and perceived power. We assessed control beliefs with five items selected from the elicitation study: (a) health, (b) cost, (c) accessibility, (d) cold weather, and (e) not Australian. We asked respondents to rate the extent to which each of the barriers would prevent them from buying their preferred soft drink, on a 7-point scale ranging from 1 (not at all) to 7 (very much). We assessed perceived power by asking respondents to rate how often each of the control factors occurred, on a 7-point scale ranging from 1 (never) to 7 (frequently).

**Self-identity.** We used two items to measure participants’ identity as a typical consumer: (a) “I consider myself a typical buyer of my preferred soft drink” and (b) “I see myself as a typical buyer of my preferred soft drink.” Participants gave their responses on a 7-point scale ranging from 1 (definitely not) to 7 (definitely), and we averaged responses to form a reliable scale ($\alpha = .86$). High scores reflected a stronger sense of self-identity as a typical consumer of their preferred brand of soft drink.

**Self-reported past behavior.** We used a single item to measure self-reported past purchase behavior. We asked respondents to estimate the number of preferred soft drinks purchased in the past 3 months and to note this amount on the survey.

**Self-reported behavior.** One week after completing the main survey, respondents completed a follow-up questionnaire in which self-reported consumption behavior was assessed with two items. First, we asked respondents to indicate how often they had purchased their preferred soft drink during the past week, on a 7-point scale ranging from 1 (not at all) to 7 (frequently). Second, we asked participants how many units of their preferred soft drink they had purchased during the past week. Thirty participants (27%) reported that they did not purchase any units of their preferred soft drink. Of the 82 participants who reported purchasing their preferred soft drink in the past week, 69 reported purchasing between one and seven units, and 13 reported purchasing more than seven units.

Principal components factor analysis with varimax rotation extracted one factor each for the items measuring (a) attitude, (b) injunctive norms, (c) descriptive norms, (d) PBC, (e) self-identity, and (f) intention. Thus, the predictors were empirically distinct. Table 1 lists the means, standard deviations, and correlations among the TPB constructs.
**TABLE 1. Means, Standard Deviations, and Intercorrelations Among Theory of Planned Behavior Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attitude</td>
<td>5.16</td>
<td>1.04</td>
<td>(.86)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Perceived behavioral control</td>
<td>6.54</td>
<td>0.71</td>
<td>.13</td>
<td>(.75)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>3. Injunctive social norms</td>
<td>4.62</td>
<td>0.96</td>
<td>.43</td>
<td>.13</td>
<td>(.77)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Descriptive norms</td>
<td>4.10</td>
<td>1.41</td>
<td>.09</td>
<td>-.05</td>
<td>.49</td>
<td>(.77)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Past behavior</td>
<td>20.93</td>
<td>25.71</td>
<td>.24</td>
<td>.11</td>
<td>.29</td>
<td>.25</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Self-identity</td>
<td>4.24</td>
<td>1.67</td>
<td>.52</td>
<td>-.10</td>
<td>.33</td>
<td>.28</td>
<td>.41</td>
<td>(.86)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Intention</td>
<td>4.59</td>
<td>1.77</td>
<td>.54</td>
<td>.01</td>
<td>.39</td>
<td>.31</td>
<td>.53</td>
<td>.63</td>
<td>(.94)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Frequency of consumption</td>
<td>3.16</td>
<td>1.86</td>
<td>.38</td>
<td>.10</td>
<td>.32</td>
<td>.36</td>
<td>.57</td>
<td>.58</td>
<td>.71</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>9. Number of drinks consumed</td>
<td>3.75</td>
<td>4.54</td>
<td>.17</td>
<td>.08</td>
<td>.07</td>
<td>.15</td>
<td>.41</td>
<td>.30</td>
<td>.36</td>
<td>.59</td>
<td>—</td>
</tr>
</tbody>
</table>

*Note.* Internal consistency reliabilities (Cronbach’s alphas) are shown in parentheses along the diagonal. All responses, with the exception of number of drinks consumed and past behavior, were made on 7-point scales.

*p < .10.*

**p < .05.***p < .01.****p < .001 (two-tailed).
Results

Preliminary Analyses

To validate the belief-based structure of the TPB model, we examined the correlations between the belief-based measures and the corresponding direct measures. We computed beliefs in line with the expectancy value formulation (Ajzen & Fishbein, 1980), with the indirect measure of attitude constituting the summed product of the behavioral beliefs and outcome evaluations. We computed the indirect measure of norms from the summed product of the normative beliefs and motivation to comply. We computed the indirect measurement of PBC by calculating the summed product of the control beliefs and perceived power. As predicted by the TPB, attitudes and behavioral beliefs (weighted by outcome evaluations) were correlated (r = .35, p < .001). Normative beliefs (weighted by motivation to comply) were correlated with prescriptive (i.e., subjective) norms (r = .26, p = .007). Last, the correlation between control beliefs (weighted by perceived power) and PBC was significant (r = –.40, p < .001). The negative correlation indicates that, consistent with the TPB, the more barriers that respondents perceived to the consumption of their preferred soft drink, the less control they felt they had over this behavior.

Test of a Revised Model

We regressed intentions to consume one’s preferred soft drink on the revised TPB model (see Table 2). At Step 1, we entered the constructs representing the standard TPB model: (a) attitude, (b) PBC, and (c) injunctive norm. At Step 2, we entered descriptive norms. At Step 3, we entered self-reported past behavior and self-identity. This regression analysis allowed us to examine the predictive utility of the TPB variables as well as the additional predictive utility of descriptive norms, past behavior, and self-identity. We selected this order of predictors in the hierarchical model because it permitted us to address the central aim of the current research: determining whether the inclusion of descriptive norms, past behavior, and self-identity added significantly to the prediction of behavioral intention over and above the prediction offered by the standard TPB model.

Inclusion of attitude, PBC, and injunctive social norms at Step 1 accounted for 33% of the variance in intention, F(3, 108) = 17.78, p < .001. The beta weights indicated significant main effects for attitude and injunctive norms only: Respondents with more positive attitudes had stronger purchase intentions, β = .46, t(108) = 5.32, p < .001, and increasing levels of approval for consumption (injunctive norms) were associated with increasing purchase intentions, β = .21, t(108) = 2.34, p = .021, thus supporting H_{1a} and H_{1b}. However, contrary to H_{1c}, PBC did not emerge as a significant predictor of purchase intentions.
<table>
<thead>
<tr>
<th>Predictor</th>
<th>Adj. $R^2$</th>
<th>$\Delta R^2$</th>
<th>$df$s</th>
<th>$\Delta F$</th>
<th>$\beta$</th>
<th>$B$</th>
<th>$SE B$</th>
</tr>
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<tbody>
<tr>
<td>Step 1</td>
<td>.31</td>
<td>.33</td>
<td>3, 108</td>
<td>17.78***</td>
<td>.46***</td>
<td>.79</td>
<td>0.15</td>
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<td>Attitude</td>
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<td>.46***</td>
<td>.79</td>
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<tr>
<td>Injunctive norms</td>
<td>–.09</td>
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<td></td>
<td>–0.21</td>
<td>–0.21</td>
<td>0.20</td>
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<tr>
<td>Perceived behavioral control</td>
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<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.34</td>
<td>.04</td>
<td>1, 107</td>
<td>6.19*</td>
<td>.22*</td>
<td>.28</td>
<td>0.11</td>
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<tr>
<td>Descriptive norms</td>
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<td></td>
<td></td>
<td>.22*</td>
<td>.28</td>
<td>0.11</td>
</tr>
<tr>
<td>Step 3</td>
<td>.54</td>
<td>.20</td>
<td>2, 105</td>
<td>23.38***</td>
<td>.31***</td>
<td>.02</td>
<td>0.005</td>
</tr>
<tr>
<td>Past behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.31***</td>
<td>.02</td>
<td>0.005</td>
</tr>
<tr>
<td>Self-identity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.32***</td>
<td>.34</td>
<td>0.089</td>
</tr>
</tbody>
</table>

*p < .05, ***p < .001.
The addition of descriptive norms at Step 2 was associated with a significant increase in the variance explained, $\Delta R^2 = .04$, $F(1, 107) = 6.19$, $p = .014$. Respondents who perceived that those important to them consumed their preferred brand of soft drink reported stronger purchase intentions, $\beta = .22$, $t(107) = 2.49$, $p = .014$, supporting $H_2$. At Step 3, the inclusion of self-reported past behavior and self-identity accounted for a further 20% of the variance in intentions, $F(2, 105) = 23.38$, $p < .001$, and both self-reported past behavior and self-identity were significant predictors of intentions to consume, supporting $H_3$. Higher levels of past purchase behavior were associated with stronger purchase intentions for the upcoming week, $\beta = .31$, $t(105) = 4.21$, $p < .001$. Furthermore, individuals who thought of themselves as typical consumers of their preferred soft drink had stronger purchase intentions, $\beta = .32$, $t(105) = 3.75$, $p < .001$. The final model accounted for 56% of the variance in intentions, $F(6, 105) = 22.47$, $p < .001$.

To test the TPB model in the prediction of self-reported behavior, we performed two additional regression analyses (see Tables 3 and 4). First, we regressed self-reported frequency of consumption on intention and PBC (Step 1) and self-reported past behavior (Step 2). Next, we regressed number of preferred soft drinks consumed on the same variables.

In the regression predicting self-reported frequency of consumption, inclusion of intention and PBC at Step 1 accounted for 52% of the variance, $F(2, 109) = 58.50$, $p < .001$. The analysis indicated a significant positive effect for intention, $\beta = .58$, $t(109) = 7.65$, $p < .001$: Stronger intentions to consume at Time 1 were associated with higher frequency of self-reported consumption. Contrary to $H_5$, PBC did not emerge as a significant direct predictor of self-reported behavior. At Step 2, past behavior was entered, accounting for a further 5% of the variance in self-reported behavior, $F(1, 108) = 11.32$, $p < .001$. As predicted in $H_4$, greater consumption in the past was associated with higher levels of self-reported consumption, $\beta = .26$, $t(108) = 3.37$, $p < .001$. The final model accounted for 57% of the variance in self-reported frequency of consumption, $F(3, 108) = 46.47$, $p < .001$.

In the regression predicting the number of units purchased, inclusion of intention and PBC at Step 1 accounted for 14% of the variance, $F(2, 109) = 8.72$, $p < .001$. The analysis indicated a significant main effect for intention only, $\beta = .21$, $t(109) = 2.04$, $p = .044$, so that higher intentions at Time 1 were associated with higher levels of self-reported consumption behavior at Time 2. Again, PBC did not emerge as a significant predictor of self-reported behavior. Inclusion of self-reported past behavior at Step 2 accounted for a further 6% of the variance in self-reported number of units consumed, $F(3, 108) = 7.86$, $p = .006$. Participants who reported consuming higher numbers of soft drink units in the past reported consuming a higher number of soft drink units in the present, $\beta = .29$, $t(108) = 2.80$, $p = .006$. The final model accounted for 18% of the variance, $F(3, 108) = 8.80$, $p < .001$. 

**TABLE 3. Hierarchical Multiple Regression Analysis Predicting Self-Reported Frequency of Soft Drink Consumption**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Adj. $R^2$</th>
<th>$\Delta R^2$</th>
<th>$df_s$</th>
<th>$\Delta F$</th>
<th>$\beta$</th>
<th>$B$</th>
<th>$SE B$</th>
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<tbody>
<tr>
<td>Step 1</td>
<td>.52</td>
<td>.52</td>
<td>2, 109</td>
<td>58.50***</td>
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<td></td>
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<tr>
<td>Perceived behavioral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.10</td>
<td>0.26</td>
<td>0.18</td>
</tr>
<tr>
<td>control</td>
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<td></td>
<td></td>
<td></td>
<td>.71***</td>
<td>0.75</td>
<td>0.07</td>
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<tr>
<td>Intention</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.56</td>
<td>.05</td>
<td>1, 108</td>
<td>11.32***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.26***</td>
<td>0.018</td>
<td>0.005</td>
</tr>
</tbody>
</table>

***$p < .001$.
**TABLE 4. Hierarchical Multiple Regression Analysis Predicting Self-Reported Number of Soft Drink Units Consumed**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Adj. $R^2$</th>
<th>$\Delta R^2$</th>
<th>dfs</th>
<th>$\Delta F$</th>
<th>$\beta$</th>
<th>$B$</th>
<th>SE $B$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>.14</td>
<td>.14</td>
<td>2, 109</td>
<td>8.72***</td>
<td>.05</td>
<td>0.51</td>
<td>0.57</td>
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<tr>
<td>Perceived behavioral control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.21*</td>
<td>0.93</td>
<td>0.23</td>
</tr>
<tr>
<td>Intention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.20</td>
<td>.06</td>
<td>1, 108</td>
<td>7.86**</td>
<td>.29**</td>
<td>0.05</td>
<td>0.018</td>
</tr>
<tr>
<td>Past behavior</td>
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</tbody>
</table>

*p < .05. **p < .01. ***p < .001.
Discussion

In the present research, we tested the utility of a revised TPB model in the consumer behavior domain. In addition to examining the relative predictive power of attitudes and PBC, we investigated (a) the distinction between descriptive and injunctive norms and (b) the roles of self-reported past behavior and self-identity. As expected, the TPB accounted for a significant proportion of the variance in the relationship among consumer attitudes, intentions, and behavior. Attitudes, injunctive norms, descriptive norms, self-reported past behavior, and self-identity all predicted self-reported intentions to consume one’s preferred soft drink. However, contrary to expectations, PBC did not exert an indirect or direct effect on self-reported behavior. Last, both intentions and past behavior predicted self-reported consumption behavior 1 week later. Overall, our TPB model was effective in explaining self-reported consumer intentions and behavior.

Turning first to the findings for the original TPB model, both attitude toward buying one’s preferred soft drink and injunctive norms were significant predictors of purchase intentions. Respondents who reported a more positive attitude toward purchasing their preferred brand of soft drink and who perceived support for consumption from those around them reported significantly stronger purchase intentions. There was no effect of PBC on intentions. However, the lack of support for the role of PBC in the prediction of self-reported intentions and behavior should not necessarily be interpreted as a failure of the model in the consumer context. In the present study, average levels of PBC were extremely high (6.5 on a 7-point scale), and ceiling effects and restriction of range may have limited the predictive power of this construct. Indeed, the selected behavior appears to be associated with high levels of volitional control, with the result that the behavior should be determined by attitudes and injunctive norms as outlined in the earlier theory of reasoned action (Fishbein & Ajzen, 1975).

In the present research, we attempted to clarify the role of normative pressures in the TPB. A number of reviews of the model have indicated that subjective norms have a much smaller impact on intentions than do attitudes (e.g., Armitage & Conner, 2001). However, this lack of evidence for norms may reflect poor conceptualization of norms within the framework of the TPB. Thus, in the present research, we investigated the distinction between injunctive norms (i.e., the norm of “ought”) and descriptive norms (i.e., the norm of “is”). Analysis revealed that both injunctive and descriptive norms predicted intentions to buy one’s preferred soft drink. Individuals were more likely to intend to purchase their preferred soft drink if they perceived support from important others to purchase that brand and if important others purchased the same brand.

The present research highlights that the distinction between injunctive and descriptive norms is useful in the consumer domain. In the consumer context, it is important to consider not only perceived levels of approval or disapproval for a behavior but also perceptions of what other people are doing. The influence
of both injunctive and descriptive norms validates the need to consider different forms of normative influence within the framework of the TPB and highlights the potential contribution of the approach in the consumer behavior domain. For example, advertisers and marketers interested in changing behavior would be advised not only to show people engaging in consumption, as is done commonly, but also to present information regarding social approval for consumption.

Our results also demonstrate the impact of past behavior on both intention and future behavior (Conner & Armitage, 1998). Self-reported past purchase behavior was a strong predictor of self-reported intentions to purchase in the next week and self-reported behavior at Time 2. This is not surprising given that the behavior involved in the present study is performed repeatedly, which brings it under the control of habitual forces rather than the rational decision-making processes specified in the TPB. Indeed, it could be argued that because many consumer behaviors are repeated often, the effects of past behavior should be controlled when examining the relative contribution of variables such as attitudes, norms, and PBC.

Self-identity was also a strong predictor of intention, even after controlling for the effects of attitudes, norms, and PBC. Individuals who perceived themselves as typical buyers of their preferred soft drink were more likely to intend to buy that soft drink in the future. In addition, our examination of the relative effects of past behavior and self-identity demonstrated that both self-identity and self-reported past behavior are important determinants of purchase intentions and, consequently, purchase behavior. Thus, our results validate the inclusion of self-identity in the framework of the TPB (see, e.g., Sparks, 2000, for a review).

Our results also validate the focus of consumer psychologists on the role of self-identity in consumer conduct. Self-identity is one of the most common added extras selected by researchers, particularly in applications of the TPB to consumer behavior (Conner et al., 1999; Cook et al., 2002; Mannetti et al., 2002; Sparks & Shepherd, 1992), and the available evidence supports the focus on the role of self-identity: People appear to behave in ways that are congruent with and that express their self-images and self-identity.

**Strengths and Limitations**

Among the strengths of the present research are that it was longitudinal in design and that, unlike most applications of the TPB with consumer behavior, it included measures of both intention and self-reported behavior. Nevertheless, the study was not without limitations. First, the present research represents a single test of the TPB in relation to consumer behavior and, therefore, is exploratory. Second, the study was conducted with a sample of introductory psychology students, potentially limiting generalizability. Given that young people are a major consumer group for the product selected (soft drinks), the results should be applicable to the wider population; nonetheless, our results need to be replicated.
Third, we relied on self-report measures, which may inflate the relationships between predictor and criterion variables because of common method variance and response bias (Morwitz, Johnson, & Schmittlein, 1993). We attempted to limit response consistency effects by using multi-item measures, negatively worded items, and a random distribution of items throughout the survey. Nevertheless, it would be useful to cross-validate the results with experimental research, in which manipulations of norms can occur, overt measures of behavior are easier to obtain, and implicit measurement techniques could be employed (see, e.g., Friese et al., 2006, for a demonstration of the utility of implicit measures in consumer behavior).

Last, it is possible that, because of the number of items that referred to the target behavior (59 items at Time 1), the relatively short duration between Time 1 and Time 2 (1 week), and the reference to self-identity, the assessment of the constructs of interest may have unintentionally created a commitment to act in the minds of the respondents, which may account for the effects observed in our research. This limitation, which is common to almost all tests of the TPB because of a reliance on survey methodology, could be addressed in future research by including a control condition in which respondents report their behavior at Time 2 without completing the measures at Time 1. A comparison of the means of the two conditions would enable researchers to determine whether assessment of the constructs of interest increases likelihood of engaging in (or reporting engaging in) the behavior of interest.

Conclusion

The TPB can provide useful insights into the processes that translate positive attitudes or evaluations into purchase intentions and purchase behavior. However, in adopting an attitude–behavior perspective on consumer conduct, it is critical to consider the impact of normative pressure, particularly the distinction between injunctive and descriptive norms, and the way in which both past behavior and self-identity work to shape consumer behavior. Future researchers should continue to test the validity of the TPB model to understand the complex interplay among attitudes, norms, and identity processes in the consumer context.

NOTES

1. Following the recommendations of Ajzen (1991; see also Evans, 1991), we recomputed the belief-based measures after the scores on the variables were rescaled using optimal scaling (Evans, 1991) to control for the fact that the scoring of the component variables in multiplicative composition (i.e., 1 to 7 vs. –3 to 3) scores may influence the magnitude of the correlation between the direct and belief-based measures of a given variable. These analyses revealed correlations of a magnitude comparable to those reported in the text.
2. Because of differences in the number of items used to assess different constructs and differences in reliabilities, we tested the relationships among the constructs with a structural equation model. This analysis revealed a pattern of results identical to the original regression analysis in terms of the pattern of significance of the predictors and the relative impact of the predictors. In the interests of simplicity of presentation of results, and to remain consistent with reporting conventions in the TPB field, we report the original regression analyses.

AUTHOR NOTES

Joanne R. Smith is a lecturer in the School of Psychology, University of Exeter, United Kingdom, who studies the impact of social identity processes in the attitude–behavior relationship and the strategic nature of group behavior. She was a research fellow at the University of Queensland, Australia, when the present research was conducted. Deborah J. Terry is a professor of social psychology in the School of Psychology, University of Queensland. Her research interests are group processes, intergroup relations, attitude–behavior relations, and social influence. Antony S. R. Manstead is a professor of social psychology at Cardiff University, United Kingdom. His research interests are the social and cognitive aspects of emotion, the impact of attitudes on behavior, attitude change processes, and the ways in which identity is influenced by social and cultural contexts. Winnifred R. Louis is a senior lecturer in the School of Psychology, University of Queensland. Her research interests include decision making in intergroup conflict, social influence, and collective action. Diana Kotterman and Jacqueline Wolfs were honors students at the University of Amsterdam when the present research was conducted.

REFERENCES


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