GENERAL RESEARCH

Attitude contagion in consumer opinion platforms: posters and lurkers

Boris Bartikowski · Gianfranco Walsh

Abstract The study details why and how product reviews from consumer opinion platforms affect individual users' brand buying behavior. Drawing on social theories, the authors predict that consumers' perceptions of other consumers' product reviews affect brand buying intentions through two intervening variables: product- and brand-related attitudes. Moreover, the authors investigate whether these relationships are contingent on user type (i.e., active posters or passive lurkers). The empirical results support a multiple mediation framework in which product- and brand attitudes mediate the effects of consumer product reviews on individual brand buying intentions. In addition, consumer product reviews appear to more strongly affect the brand-related attitudes of posters than lurkers. Lurkers, who make up the majority of opinion platform users, are much less influenced by the opinions of others than posters. Encouraging variations in poster- and lurker rates may be an effective means for companies to manage and control consumer-to-consumer communication.

Keywords eWOM · Poster · Lurker · Consumer product reviews

JEL classification D71 · D83 · M31

B. Bartikowski (✉)
KEDGE Busines School, Domaine de Luminy,
13288 Marseille cedex 9, France
e-mail: boris.bartikowski@kedgebs.com

G. Walsh
Faculty of Economics of Friedrich-Schiller,
University Jena, Jena, Germany
e-mail: walsh@uni-jena.de

Introduction

Researchers have devoted increasing attention in recent years to the expansion and management implications of consumer-to-consumer communication on the Internet (Bae and Lee 2011; Davis and Khazanchi 2008; Brown et al. 2007; Lee and Lee 2009). The present research focuses on consumer opinion platforms, which are online forums that encourage consumers to provide product reviews. Consumer reviews are increasingly important because of their capacity to influence consumers' buying decisions (Bae and Lee 2011; Chevalier and Mayzlin 2006; You et al. 2012). Despite their importance for firms though, consumer opinion platforms are not fully understood in this respect.

The present study seeks to develop insights into the psychological process of opinion platform users' attitude formation and brand buying behavior. Previous research suggests that electronic word of mouth (eWOM) is accumulated consumer opinion (market level) that informs an individual consumer's decision-making process (Lee and Lee 2009; Nowak et al. 1990; Price 1989; Salmon and Oshagan 1990). Hence, analogous to perceived product information from corporate sources, consumers perceive other consumers' product reviews as a market signal that may affect their brand buying decisions. Investigations of the effects of perceived attitudes of others have long been an important concern in social psychology and public opinion research (Nowak et al. 1990; Salmon and Oshagan 1990; Price 1989), but no studies have provided sufficient explanations for why and how perceived community attitudes toward a product (PCAP), retrieved from online opinion platforms, inform individual brand preferences. In addressing this research gap, we draw on the phenomenon of social attitude contagion (Burkhardt 1994; Howard and Gengler 2001; Leender 2002) and normative social influences, in line with theory of reasoned action (Fishbein and Ajzen 1975), as means to understand attitude formation and brand buying decisions by users of opinion platforms. Specifically, we predict that PCAP affects an

🖄 Springer

individual user's attitudes toward the product (e.g., iPhone), as well as her or his attitudes toward the product's brand (e.g., Apple) and then ultimately brand buying intentions (i.e., to consider Apple products for future purchases). Accordingly, we hypothesize that the effect of PCAP on brand buying intentions is mediated by product- and brand-related attitudes. Hence, one original contribution of the present study relates to the conceptualization of PCAP as an explanatory variable of online consumers' attitude formation and buying behavior.

Previous research suggests that opinion platform users can be differentiated in terms of posters and lurkers. Posters are users who regularly post and read comments, while lurkers mostly (only) read comments without posting (cf., Hsu and Lin 2008; Nonnecke and Preece 2001). Blanchard and Markus (2003) refer to posting and lurking as active and passive participation behaviors, respectively. We draw on this differentiation of user type and argue that posters and lurkers differ in their motivational drives to use online opinions platforms. In particular, we argue that self-presentation motives are more prevalent for posters, while information gathering motives are more prevalent for lurkers. Based on these motivational differences we generate hypotheses to explore user type as a factor that may account for variations in the strength of the relationships between PCAP and individual attitudes toward the product and the brand.

The differentiation between posters and lurkers is highly relevant for practitioners, but has rarely been considered before (Hsu and Lin 2008). Marketers frequently reward consumers for writing product reviews in an attempt to create buzz and improve product awareness (e.g., Bae and Lee 2011). However, before doing so, marketers should consider that the impact of such product reviews on consumers' buying behavior varies with the participation role of the user. Hence, the study's findings offer guidelines for developing strategies to effectively manage consumer-to-consumer communication based on variations in poster- and lurker rates on consumer opinion platforms.

Electronic word of mouth

Hennig-Thurau et al. (2004, p. 13) define electronic word of mouth (eWOM) as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet." Consumers increasingly use eWOM as an information source that allows them to obtain extensive opinions about the product (Davis and Khazanchi 2008; Lee and Lee 2009). Studies suggest that consumers perceive eWOM as more persuasive, more trustworthy, and more relevant than information from corporate sources (Bae and Lee 2011; Lee and Youn 2009). Yet eWOM also poses a threat to companies, because managers have little control over

negative messages or rumors spread by unsatisfied consumers (Muñiz and O'Guinn 2001). An important question for managers therefore is how consumer reviews may be used to effectively promote products and the brand.

Consumers retrieve product reviews mainly to minimize their decision-making time, reduce perceived risk, and make better informed buying decisions (Hennig-Thurau and Walsh 2003). Further motives relate to post-purchase involvement; some consumers read other consumers' product reviews to reduce their cognitive dissonance and obtain confirmation for their choices (Goldsmith and Horowitz 2006). They also could draw on such reviews to enjoy the social prestige associated with a product they already possess (Hennig-Thurau and Walsh 2003). Regarding motives for giving eWOM, studies suggest that the desire for social interaction and economic incentives, concern for other consumers, and the potential to enhance self-worth represent primary drivers of eWOM behavior (Hennig-Thurau et al. 2004; Schau and Gilly 2003). Hsu and Lin (2008) show that ease of use, enjoyment, and knowledge sharing for altruistic and reputational reasons positively affect attitudes toward using online information communities. According to these authors, bloggers blog because they seek social interaction and expect feedback from others (Hsu and Lin 2008). Similarly, the needs to be part of a group, be individualistic, be altruistic, and attain personal enhancement drive consumers to forward online content to others (Ho and Dempsey 2010; Preece et al. 2004). Taken together, previous research suggests that the need for group affiliation and the desire to enhance self-representations are key factors that motivate consumers to spread eWOM, whereas informational needs primarily drive eWOM retrieval.

Research model and hypotheses

Although previous investigations enhance understanding of consumers' motivations to spread or retrieve eWOM, little is known about how product information retrieved from consumer opinion platforms affects the product and brand evaluations of individual users. Lee and Lee (2009) show that variations in average eWOM ratings and variations in the valence of eWOM moderate the relationships between individually perceived product quality, product preference, and purchasing intentions. Bae and Lee (2011) show that the credibility of eWOM in the form of consumer product reviews may depend on both, the source of information (consumer- versus marketer-developed review sites) and the type of product (experience versus search products). The present study complements this stream of research by focusing on the process of individual attitude formation with eWOM as an antecedent of individual attitudes and brand intentions.
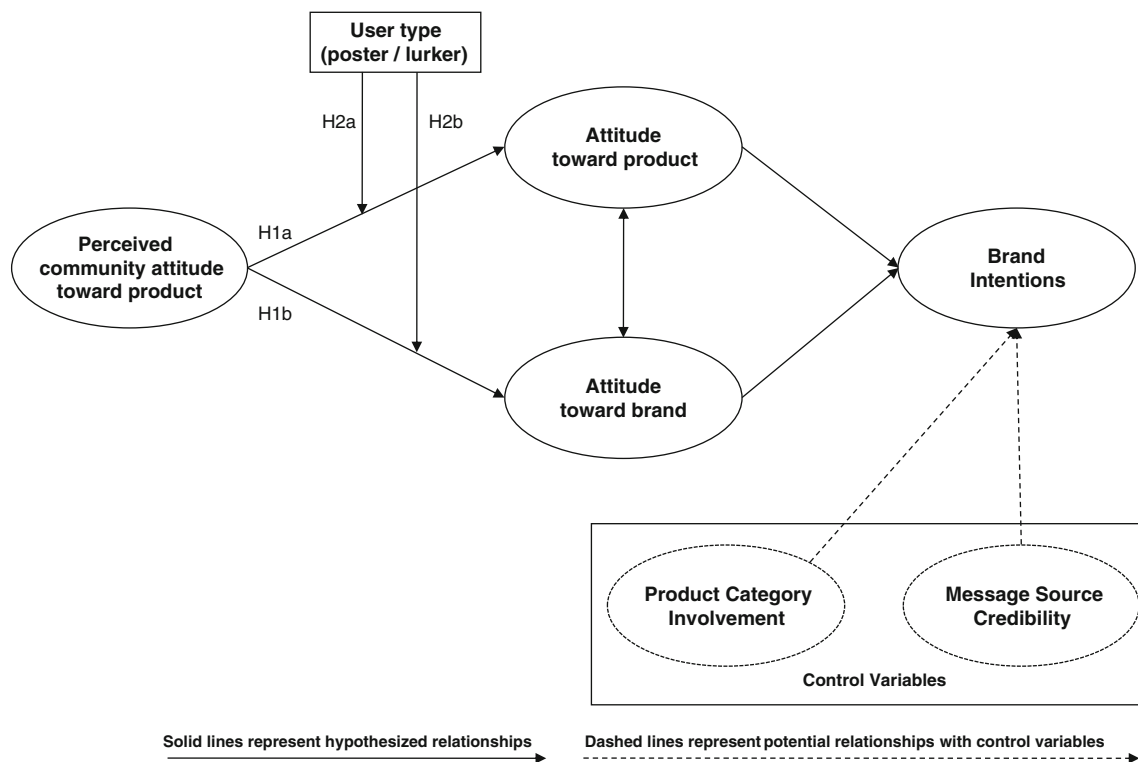
Fig. 1 Conceptual model

As our conceptual model in Fig. 1 reveals, we assume that individual product- and brand attitudes mediate the relationship between PCAP and brand intentions. A mediator variable is one that transfers the effect of an independent variable (here PCAP) to a dependent variable (here brand intentions). As such, a mediator variable explains the process that underlies the relationship between two variables. In statistical terms, a mediator variable is characterized by variations in levels of the independent variable that significantly account for variations in the mediator- and the dependent variable (Baron and Kenny 1986). Full or complete mediation exists when the independent variable no longer directly affects the dependent variable when a mediator variable is considered; partial mediation means that the independent variable affects the dependent variable both directly and indirectly (via the mediator). Our conceptual model suggests a multiple mediation framework, meaning that two mediators (product- and brand attitudes) are at play to transfer the effect of PCAP on brand intentions. The model also suggests that user type (lurker versus poster) moderates the relationship between PCAP and product- and brand attitudes. A moderator variable is one that influences the strength of the relationship between two other variables (Baron and Kenny 1986). Hence, we assume that the strength between PCAP and the two types of attitudes is contingent on user type. In order to strengthen the generalizability of our model we also account for the potential influence of two relevant control variables – category involvement and source credibility.

Theoretically, we draw on the social contagion phenomenon, social identity, cognitive dissonance, as well as the Theory of Reasoned Action to generate formal hypotheses about the relationships displayed in Fig. 1. We discuss the rationales for the assumed mediated and moderated effects, as well as for including the control variables subsequently.

Effects of perceived community attitudes

For our first two hypotheses, we turn to prior research that suggests individual attitudes and behaviors depend on the social influence of others (Cialdini and Goldstein 2004; Griskevicius et al. 2008). Several streams of research emphasize the important role of peer influence (Bearden et al. 1989), or herd behavior (Liu and Sutanato 2012) which all show when and how people follow the actions of others. The notion of peer influences in attitude formation also resonates with social contagion, a phenomenon that has been largely confirmed by social scientific research: attitudes and behaviors can spread through populations as if they were infectious (Hatfield et al. 2009; Marsden, 1998). For example, Hatfield et al. (1994) show that people may automatically mimic and synchronize behaviors with that of others in an attempt to converge with them. A study by Salganik et al. (2006) shows that information about peers' music preferences (i.e., number of downloads of a song) shapes individual music preferences in a way that suggests social attitude contagion. In this sense,

attitude contagion is the phenomenon by which exposures to attitudinal messages from others increases the likelihood that people develop beliefs, assumptions, and attitudes similar to those of their peers (e.g., Burkhardt 1994; Olson and Fazio 2004; Leender 2002). In the commercial context, studies show that consumers' product evaluations can stem from the beliefs that one person conveys to another (Brown and Reingen 1987). Marsden (1998) calls the implications from the contagion phenomenon "radical", as it suggests that mere contact between people is a sufficient condition for the occurrence of social transmissions which ultimately shape behavior. Hence, considering the phenomenon of attitude contagion appears as well highly relevant to explain the commercial value of eWOM and related management implications (e.g., Howard and Gengler 2001).

Social comparison processes have been shown at the base of social contagion effects (Gump and Kulik 1997; Wrightsman 1960). Hsu and Li (2008, p. 67) draw on social identity theory (Tajfel and Turner 1985) to argue that people who participate in a social system identify with and assume a role in it, and "usually behave as expected by other members." Similarly, Algesheimer et al. (2005) suggest that online communities exert social pressure on their members, particularly on those who are more engaged. Such normative community pressures affect what people think and do in the community. The notion of social influence as a driver of individual behavior also is prominent in the theory of reasoned action (Fishbein and Ajzen 1975). This theory specifies that behavioral intentions are functions of two determinants: an individual's attitude toward the behavior and perception of social pressures, which Fishbein and Ajzen (1975) call subjective norms. Subjective norms encapsulate the person's normative beliefs, which are "concerned with the likelihood that important referent individuals or groups would approve or disapprove of performing the behavior" (Ajzen and Madden 1986, p. 455).

Deviation of individual attitudes from the group norm (i.e., differences between the individual user's attitude and PCAP) may trigger cognitive dissonances because the individual perceives her or his stance as different from that of the reference group. To avoid such dissonances and achieve a state of cognitive balance, people may reconcile personal attitudes with perceived community attitudes that serve as the normative reference for social identification (Bagozzi and Dholakia 2002; Brown et al. 2007). Product-related attitude contagion therefore may result from dissonance arousal, triggered by a deviation from the perceived community opinion which serves as an individual norm. A dissonance-reduction strategy that opinion platform users may potentially employ is to concur with the dominant opinion of the community.

In our study context, we capture subjective norms by PCAP and anticipate that PCAP exerts a normative influence on opinion platform users and their attitudes. Accordingly, we assume that PCAP relates positively to individual attitudes toward the product and brand, but not directly to brand intentions (Fig. 1). Product and brand attitudes in turn should relate positively to brand intentions, again in line with the theory of reasoned action, which states that attitudes precede behavioral intentions (Fishbein and Ajzen 1975). In summary, we theorize that users of opinion platforms derive their product and brand attitudes through social attitude contagion and normative pressures, and this effect extends to brand buying intentions, such that individual attitudes mediate the effects of PCAP on brand intentions.

H1a: Individual attitudes toward a product mediate the effect of PCAP on brand intentions.
H1b: Individual attitudes toward a brand mediate the effect of PCAP on brand intentions.

Contingencies of user type

A defining feature of consumer opinion platforms is the community element. For example, Epinions states that "millions of reviews from the Epinions community" can help consumers make better informed choices (www.epinions.com). Similarly, Review Centre describes itself as a "community of real people, just like you, sharing their product and service experiences" (www.reviewcentre.com). Users of these forums can read and respond to other users' posts, evaluate other reviews, and expand discussions on topics that may or may not be related to the initial issue. Epinions even allows users to evaluate other reviewers, who can reach the status of a Top Reviewer and benefit from a greater impact in determining which reviews are seen by new visitors. Arguably, such spaces provide venues for social groups or communities to develop and alter social interactions by allowing consumers to connect, interact, and improve their self-concept. Bagozzi (2000) notes that some fundamental characteristics of communities are their shared attitudes, beliefs, and preferences. Similarly, Kim et al. (2008, p. 208) state that "when a group of people coalesce into a community, they develop a unique set of community standards that reflect their needs, interests, and values." Bagozzi and Dholakia (2002) also recognize that the community acts as an important reference group for individual participants. Similarly, Brown et al. (2007) argue that an online community can act as a "social proxy for identification."

Drawing on this evidence from prior literature we assume that the attitude formation process in online opinion platforms differs for posters and lurkers. In particular, previous literature suggests that posters and lurkers alike join online communities because they share common interests and want to improve their understanding of a topic (Preece et al. 2004). Lurkers may not engage in posting, because their informational needs can be satisfied without doing so (Preece et al. 2004). In contrast, posters seek to gratify social-emotional needs; posting gives

them a way to present themselves, raise their self-image, promote their status, convince others to believe what they believe, and enhance their self-concept (Balasubramanian and Mahajan 2001; Heehyoung et al. 2008). Overall, prior literature suggests that lurking behaviors center more on information gathering, whereas posting constitutes a self-defining, self-expressive behavior. Thus posters may work to project a desired image about themselves that can be maintained by consistently performing coherent and complementary behaviors (Schau and Gilly 2003).

Cognitive strategies of dissonance reduction are especially prominent when dissonance affects self-esteem (Steele 1988). Tajfel and Turner (1985) note that people derive a perception of their social identity from their membership in a relevant social group. In particular posters should work to reduce dissonance by adapting their attitudes to the opinions of the community, because of the stronger salience of their group membership and their greater desire for group affiliation and self-representation. Bagozzi and Dholakia (2002) argue that "we-intentions" (i.e., intention to act as an agent of the group and in concert with other group members) drive active participation in virtual communities. That is, as active community members, posters likely have strong we-intentions and should tend to adapt their attitudes to match community norms, which enables them to act in concert with other group members. Lurkers may be less concerned about how the community thinks about products, because they are less involved in the community, and their we-intentions may not be particularly distinctive. Rather, they use the opinion platform mainly to satisfy their functional goals in terms of gathering informational needs. User-generated product-review content from consumer opinion platforms thus should prompt social attitude contagion particularly for posters but to a lesser extent for lurkers, suggesting a moderating role of user type in the relationship between PCAP with product- and brand attitudes.

H2a: The effect of perceived group attitudes toward a product on individual attitudes toward the product is stronger among posters than among lurkers.
H2b: The effect of perceived group attitudes toward a product on individual attitudes toward the brand is stronger among posters than among lurkers.

Control variables

To strengthen the generalizability of our study's findings, we use category involvement and source credibility as control variables (Fig. 1). Hence, we assume that our model holds regardless of the potential effects these variables have on brand intentions. Product category involvement is defined as the extent to which a product category has personal relevance for consumers and has been shown to positively influence consumers' attitudes toward advertising (Putrevu 2008).

Highly involved consumers are inclined to engage in detailed information search which results in improved knowledge and attitude strength, and may in turn lead to improved attitude-behavior consistency (e.g., Dick and Basu 1994; Petty and Cacioppo 1981). Hence, category involvement (here involvement with electronic communication products) may account for variance in brand intentions. Source credibility, which is the second control variable in our model, designates one's perceptions of a communication source's expertise and trustworthiness (Brown et al. 2007; Doney and Cannon 1997). As such, source credibility is frequently seen as an antecedent of advertising effectiveness (Choi and Rifon 2002). This is because greater persuasion may result from communication when the message source is perceived as credible (Hovland et al. 1953). Hence also source credibility (in our study the credibility of information retrieved from a consumer opinion platform) may account for variance in brand intentions.

Method

Measures and data collection

We surveyed users of two popular French consumer opinion platforms that offer consumer reviews of electronic communication products (smartphones, tablet PCs, etc.). Consumer electronics is among the most popular product categories that consumers purchase online (Nielsen 2010) and therefore provides an appropriate context for this study. An online questionnaire with multi-item measures for the constructs of interest was posted on the main pages of these sites, where it appeared for 4 weeks. Site visitors could volunteer to participate in the survey, meaning that the resulting sample is a non-probability convenience sample. Approximately 20 % of people who clicked on the questionnaire link filled the questionnaire subsequently and provided answers in relation to the latest threat of a consumer product review they read. In our final sample of 270 opinion platform users, most respondents (63 %) were men, and (84.4 %) of the respondents were between 18 and 34 years of age, meaning that the sample is skewed versus the younger (the detailed age distribution was: 18–24 years: 37.8 %; 25–34: 46.7 %; 35–49: 12.2 %; 50–64: 3.3 %). Although people older than 34 years are underrepresented in this sample, the age distribution tends to reflect social media user statistics that show that the social media activity is mostly driven by people aged 18–34 (Nielsen 2012).

The measures were borrowed from previous research and adapted to the context of this study. Despite the constructs and measures we use stem from established sources and have been successfully applied in recent consumer research, they have not been used in relation to consumer opinion platforms and therefore required adaptations in the wording of the items. No

explicit measure for PCAP exists in the literature. The items for this construct were inspired from Shang et al. (2006, p. 401) who measured "perceived attitude toward the brand contained in the messages within the community," and from Salmon and Oshagan (1990), who measured "perceptions of majority opinion." Items to measure attitude toward product came from Batra and Ahtola (1991) and Voss et al. (2003). The measures for attitude toward the brand stem again from Batra and Ahtola (1991) and from Chaudhuri and Holbrook (2001). The measures for brand intentions came from Mac-Kenzie et al. (1986) (see also Voss et al. 2003). Finally, the items for the category involvement came from Zaichkowsky (1985) (see also Spielmann and Richard 2012) and measures for source credibility were taken from Doney and Cannon (1997) (see also Rau et al. 2009). The measures underwent translation/back-translation by two bilingual (English/French) speakers, with inconsistencies resolved through subsequent discussions with the authors. The translated and adapted scales were pretested and refined with data gathered from a convenience sample of 28 graduate students. All measures appear in Appendix 1.

We used five-point Likert-type scales (1="strongly agree" to 5="strongly disagree"). We categorized respondents as lurkers if they stated they had not posted messages on consumer opinion platforms for at least a 3-month period prior to filling the questionnaire; on the contrary, posters are defined as users who posted at least one message within this period of time (Nonnecke and Preece 2001; Preece et al. 2004).

Test of the measurement model

In line with Anderson and Gerbing (1988), we first conducted a confirmatory factor analysis (CFA) to evaluate the measurement model. The model fit is good (root mean squared error of approximation [RMSEA]=0.06; confirmatory fit index [CFI]=0.97; Tucker-Lewis index [TLI]=0.97, and χ^2/df= 1.96), and the chi-square statistic is significant (χ^2=203.82; df=104; $p<0.01$). All loadings on the hypothesized factors are large and highly significant ($p<0.001$) (cf., Appendix 1). As shown in Table 1, all average variance extracted (AVE) values are greater than 0.5, and the composite reliabilities (ρ) for the measured constructs are above the recommended levels, which suggests convergent validity (Fornell and Larcker 1981). Moreover, the AVEs for the six constructs are greater than the squared correlations for all pairs of constructs, in support of discriminant validity (Fornell and Larcker 1981). In Table 1 we report the detailed results for this assessment, together with the descriptive statistics. Appendix 2 additionally displays the covariance matrix for the investigated constructs.

Additionally to the previous assessments we employed split-half reliability- and validity tests by dividing the sample randomly into two groups and running the tests again for each

Table 1 Measurement model results

	(1)	(2)	(3)	(4)	(5)	(6)
(1) PCAP	*0.78*					
(2) Attitude toward product	0.24	*0.74*				
(3) Attitude toward brand	0.19	0.25	*0.76*			
(4) Brand intention	0.12	0.27	0.37	*0.95*		
(5) Category involvement	0.00	0.08	0.00	0.02	*0.81*	
(6) Source credibility	0.06	0.04	0.01	0.02	0.18	*0.68*
Composite reliability ρ	0.91	0.90	0.90	0.98	0.93	0.86
Mean	3.55	4.08	3.97	3.87	4.34	4.22
Standard deviation	0.85	0.80	0.88	1.14	0.76	0.67

Values on the main diagonal are average variances extracted; values below are squared correlations. *PCAP* perceived community attitude toward a product

group, with no problems detected. We also used Lindell and Whitney's (2001) marker technique to control for common method bias, with no problems detected.

To test the hypothesized meditational effects of individual product- and brand attitudes in the relationship between PCAP and brand intentions, we followed Preacher and Hayes' (2008) propositions to specify a multiple-mediation model. Doing so is indicated because the two mediators (product and brand attitudes) are correlated (Table 1). Preacher and Hayes (2008) offer procedures that allow for estimating the specific indirect effect of multiple mediators while simultaneously controlling for other variables (here: product category involvement and source credibility). To investigate user type as a moderator variable, we built composites of the model variables which we used to estimate the model separately for posters and lurkers. Our results are based on bootstrapping with 2000 resamples (Table 2).

The model explains a highly significant ($p<0.01$) portion of the variance of brand intentions for both groups of respondents, with R^2=0.39 for posters and R^2=0.40 for lurkers. None of the control variables was significant in terms of affecting brand intentions or adding to the explanatory power to the model. The partial effect of category involvement on brand intention was 0.09 (n.s.) for posters and 0.00 (n.s.) for lurkers, and the partial effect of source trustworthiness on brand intentions was −0.02 (n.s.) for posters and 0.13 (n.s.) for lurkers. The effects we report in the next section thus cannot be due to the control variables.

The results in Table 2 reveal that PCAP for posters and lurkers relates positively to individual attitudes toward the product (B=0.48 for posters, B=0.34 for lurkers), as well as to individual attitudes toward the product brands (B=0.59 for posters, B=0.28 for lurkers). Individual attitudes toward the product and brand are also positively related to brand intentions in both samples (Table 2). The basic requirements for mediation thus are fulfilled, because the assumed mediator variables relate

Table 2 Results of hypotheses testing

Direct effects			Poster (n=146) R^2=0.39; $F(3,142)$=29.86**		Lurker (n=124) R^2=0.40; $F(3,120)$=27.02**	
			Effect	Std. Error	Effect	Std. Error
PCAP	→	Product attitude	0.48**	0.07	0.34**	0.08
	→	Brand attitude	0.59**	0.08	0.28**	0.08
Product attitude	→	Brand intention	0.30**	0.12	0.49**	0.11
Brand attitude	→		0.61**	0.11	0.52**	0.10
PCAP	→	Brand intention	.00^{NS}	0.11	.05^{NS}	0.09
Indirect effects						
PCAP→Product attitude→Brand intention			0.15*	0.08	0.17**	0.05
PCAP→Brand attitude→Brand intention			0.36**	0.09	0.14**	0.05

Effect values are non-standardized regression coefficients

PCAP perceived community attitude toward a product, *NS* not significant

*p<0.05; **p<0.01

positively to the independent and dependent variables. All indirect (mediated) effects are significant (p<0.05) for both groups, in support of the mediating role of individual product and brand attitudes. The indirect effect of PCAP on brand intention through product attitude is 0.15 for posters and 0.17 for lurkers; the indirect effect through brand attitude is 0.36 for posters and 0.14 for lurkers. The results also reveal no significant direct effect from PCAP to brand intentions, so the effect of PCAP on brand intentions appears fully mediated by individual attitudes, in support of H1a and H1b (Table 2).

To investigate the moderation hypotheses, we next compare the regression coefficients associated with product and brand attitudes across the two groups (posters and lurkers). The relationship between PCAP and product attitude is in the hypothesized direction, and the coefficient is greater in value for posters (B=0.48) than lurkers (B=0.34). However, the difference is not significant (Δ=0.14; t=1.32; df=266; p>0.05), so we cannot confirm H2a. Regarding the relationship between PCAP and brand attitudes, we again find that the coefficient is greater for posters (B=0.59) than for lurkers (B=0.28); the difference between these specific effects is highly significant (Δ=0.31; t=2.74; df=266; p<0.01), in support of H2b. User type thus moderates the relationship between PCAP and individual brand attitudes.

Discussion

Theoretical implications

The purpose of this study was to link consumers' perceptions of other consumers' product reviews to individual product- and brand-related attitudes to ultimately predict brand buying intentions. It appears that PCAP acts as a proxy for subjective norms, which represent key antecedents of individual attitudes. In this sense, the findings are consistent with predictions from the theory of reasoned action, which provides an

appropriate theoretical framework to explain social attitude contagion on consumer opinion platforms. Furthermore, opinion platform users' attitudes affect their brand intentions, again in agreement with the theory of reasoned action, which is premised on the belief that an immediate predictor of behavioral intention is attitudes. Accordingly, this study's results show that product- and brand related attitudes fully mediate effects of PCAP on brand buying intentions.

Regarding the identified moderator effects of opinion platform user type (poster/lurker), our findings corroborate previous research that suggests posters post mainly to satisfy self-representational needs (Balasubramanian and Mahajan 2001; Schau and Gilly 2003). We predicted stronger attitude contagion effects for posters because of their likelihood to engage in dissonance reduction, meaning that they adapt their beliefs to those of the community and perform coherent behaviors. However, this moderating effect is empirically confirmed only for brand attitudes (H2b), not for product attitudes (H2a). A possible interpretation of this noteworthy finding is that posters lean much more on brands than on products to express themselves in the community. Indeed, brand associations tend to be descriptive of human identities that consumers may embrace for improving their self-concept (Aaker 1997; Keller 1998). For example, Heehyoung et al. (2008) note that a brand achieves success when consumers express their personal characteristics through it, as a result of their online community membership. Similarly, our results suggest that posters are more willing to "listen" to others' opinions about brands than about products, because brands carry meanings that help consumers express themselves.

Managerial implications

Kozinets et al. (2010, p. 71) assert that the "Internet's accessibility, reach, and transparency have empowered firms that are interested in influencing and monitoring WOM as never before." Although consumer opinion platforms represent a

golden opportunity to initiate consumer-to-consumer communication about products, they also can expose firms to reputational liabilities, such as when consumers write posts that question the firm's integrity (Van Lear and De Ruyter 2010; Singh et al. 2008). The lack of control over messages on consumer opinion platforms urges firms to monitor such forums to determine what consumers think about their products and brands (You et al. 2012). The results of our study tell an interesting story about how to interpret the functions of consumer opinion platforms as potential antecedents of brand buying intentions. Our findings tie in with prior research that asserts that customer advocacy is an important factor for improving brand equity (Kozinets 2002) and that firms might harness the viral power of virtual postmodern consumer tribes to create positive brand equity (Cova et al. 2007). According to Aaker (1991), brand equity can be viewed as a set of assets linked to the brand. Favorable brand intentions formed online represent just such assets and require managerial attention.

Our results support the strong link between PCAP and individual product- and brand attitudes mainly for posters (i.e., users who contribute actively), but to a much lesser extent for lurkers (those who participate passively). Per consequence, encouraging variations in poster- and lurker rates may be a promising strategy for companies who want to manage consumer-to-consumer communication. However, the question whether a company benefits more from lurkers or posters is obviously related to the valence of previous postings (Berger and Milkman 2012). For example, in a recent paper Alexandrov et al. (2013) emphasize the importance of differentiating WOM along its valence, since the drivers of WOM may vary for positive versus negative WOM. In line with the present study's results, high poster rates are harmful if negative comments prevail, since posters' own attitudes and brand buying intentions are strongly affected by what the community thinks. Per consequence, if negative comments prevail, firms should try to discourage consumer postings and contend with lurkers, who are generally more indifferent toward what other users say. On the contrary, if positive comments are dominant, firms should be cognizant that posters are more likely adopt a positive tenor from consumer reviews than lurkers, suggesting that firms should push posting behavior.

In summary, firms should encourage higher poster rates when a positive reviews prevail, but discourage postings when the gist of extant comments is negative. Various possibilities exist to encourage consumers to write product reviews, such as offering rewards in terms of gratification points or monetary benefits (Bae and Lee 2011). Firms may also act as active contributors on product review website by asking questions such as "What is your preferred …?" which likely promotes fast and easy responses and incites consumers to get involved

into a discussion. Firms may as well organize contests in which they offer contributors the chance to win something if they leave their thoughts on a specific topic, or they may offer polls and make the results public only to those who contribute. However, as previously suggested, when negative consumer reviews prevail, managers should refrain from such activities and try to discourage high poster rates. Rather, firms should then feed extant reviews with objective and verifiable product information, that emphasizes the products' unique advantages and uncontestable qualities.

Limitations and further research opportunities

This study is subject to several limitations that offer opportunities for additional research. First, our results stem from a convenience sample of survey respondents that is inherently by some kind of sampling bias. For example, a silent majority of the population from which we drew our data may not have filled the questionnaire, resulting in selection bias, thereby limiting the generalizability of the empirical results. Such sampling bias appears to be a common problem to much published survey and experimental research that uses convenience or non-probability samples to test theory. It is therefore important to note that replications of the present study, for example in a laboratory setting, with different product categories or with respondents from different countries would help to consolidate the findings.

Second, our findings are related to typical search products (electronic communication) and the data stems from marketer-developed product review websites, which have been shown to differ in credibility from consumer-developed forums. Bae and Lee (2011) show that message source (marketer- versus consumer developed product reviews) and product type (search- versus experience products) interact such that consumer product reviews for experience products are most credible if they originate from consumer developed sites. Since social relationships among consumers tend to be more intense on consumer-developed review sites than on marketer-developed review sites (Bae and Lee 2011), we expect that the effects found in this study will be enhanced on consumer-developed review sites. Similarly, we also expect enhanced effects for consumer reviews of experience products, which tend to be more influential than reviews of search products (Bae and Lee 2011; Park and Lee 2009). However, these are only speculations that should be examined further.

Another critical point is that our research design cannot distinguish between objectively positive and negative postings, though research suggests that negative reviews have a greater effect on sales than positive reviews, maybe because consumers consider negative information more helpful

(Chevalier and Mayzlin 2006; Pavlou and Dimoka 2006). Similarly, recent research shows mixed evidence regarding whether it is more likely that consumers spread negative or positive information (East et al. 2008). Perhaps opinion platform users who write more negative postings about products have greater confidence in their own judgments and judgment accuracy and do therefore not hesitate to express their negative opinions; on the other hand, some users may write more positive information in an attempt to improve their self-concept and appear more optimistic or constructive. Additional research should investigate the effects of positive or negative comments on user attitudes to explore the goal-matching satisfaction achieved by those who write the reviews.

Moreover, opinion platform membership tenure and involvement may relate to users' attitudes and subsequent brand intentions. According to Chan and Li (2009), reciprocity has critical effects on social system maintenance, such that members of online information communities keep contributing to communities as long as they believe other participants remain active too. When opinion platform users perceive reciprocity, it likely enhances their commitment to the community, which could make them more receptive to the product- and brand-related norms of the community. Additional research should explore this issue.

Future studies should refine the empirical differentiation between posters and lurkers. A clear-cut between posters and lurkers based on static behavioral measures, as proposed in the present study, may in reality not exist. Instead, future research may draw on opinion platform users' self-classification into posters and lurkers. Researchers may develop a measurement scale that taps different dimensions of posting and lurking behaviors, for example, in relation to utilitarian and hedonic benefits user gain from opinion platform participation. Such a scale may offer new and enhanced perspectives to differentiate posters and lurkers.

In addition, we call for research that pursues several other developments in eWOM theory. It would be interesting to learn whether and to what extent attitude contagion, as described in this study, is dominated by a few active opinion leaders, as well as whether attitudes evolve slowly and consensually. Fruitful research in this field could conceptualize and investigate the social authority and opinion impact strength of individual community members. Finally, researchers could investigate whether brand-centered opinion platforms insulate consumers from negative information disseminated outside the community. To conclude, how consumer-generated product reviews influence other consumers' product and brand preferences is an abundant field for further investigations.

Appendixes

Appendix 1

Construct and measures	Loading (λ)
Perceived community attitude toward a product	
Overall, I think the members of this community like this product.	0.92
The comments I read about this product were globally very positive.	0.86
My impression is that the community members appreciate this product.	0.86
Individual attitude toward product	
I find this product useful.	0.87
I think this a performance product.	0.88
I find this product interesting.	0.83
Individual attitude toward brand	
I like this brand.	0.92
I trust this brand.	0.78
This brand has a good reputation.	0.90
Brand intentions	
I like to buy products from this brand.	0.97
If I needed a new product in this category, I would consider buying this brand.	0.98
Category involvement	
I feel particularly attracted by electronic products.	0.85
I am very interested in electronic products.	0.90
Electronics are very important to me.	0.98
Source credibility	
I consider information from this opinion platform	
…trustworthy.	0.73
…credible.	0.78
…competent.	0.95

Appendix 2

	(1)	(2)	(3)	(4)	(5)	(6)
(1) PCAP	0.68					
(2) Attitude toward product	0.3	0.57				
(3) Attitude toward brand	0.27	0.28	0.55			
(4) Brand intention	0.31	0.44	0.51	1.27		
(5) Category involvement	−0.01	0.16	0.02	0.11	0.55	
(6) Source credibility	0.12	0.09	0.04	0.09	0.18	0.34

References

Aaker, D. A. (1991). *Managing brand equity: capitalizing on the value of a brand name*. New York: The Free Press.

Aaker, J. L. (1997). Dimensions of brand personality. *Journal of Marketing Research, 34*(3), 347–356.

Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology, 22*(5), 453–474.

Alexandrov, A., Bryan, L., & Babakus E. (2013). The effects of social- and self-motives on the intentions to share positive and negative word of mouth. *Journal of the Academy of Marketing Science, 41*(5), 531–546.

Algesheimer, R., Dholakia, U. M., & Herrmann, A. (2005). The social influence of brand community: evidence from European car clubs. *Journal of Marketing, 69*(3), 19–34.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423.

Bae, S., & Lee, T. (2011). Product type and consumers' perception of online consumer reviews. *Electronic Markets, 21*(4), 255–266.

Bagozzi, R. P. (2000). On the concept of intentional social action in consumer behavior. *Journal of Consumer Research, 27*(3), 388–396.

Bagozzi, R. P., & Dholakia, U. M. (2002). Intentional social action in virtual communities. *Journal of Interactive Marketing, 16*(2), 2–21.

Balasubramanian, S., & Mahajan, V. (2001). The economic leverage of the virtual community. *International Journal of Electronic Commerce, 5*(3), 103–138.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182.

Batra, R., & Ahtola, O. T. (1991). Measuring the hedonic and utilitarian sources of consumer attitudes. *Marketing Letters, 2*(2), 159–170.

Bearden, W. O., Netemeyer, R. G., & Teel, J. E. (1989). Measurement of consumer susceptibility to interpersonal influence. *Journal of Consumer Research, 15*(March), 473–481.

Berger, J., & Milkman, K. L. (2012). What Makes Online Content Viral? *Journal of Marketing Research, 49*(2), 192–205.

Blanchard, A., & Markus, L. M. (2003). The experienced 'sense' of a virtual community: characteristics and processes. *Database for Advances in Information Systems, 35*(1), 65–79.

Brown, J. J., & Reingen, P. H. (1987). Social ties and word-of-mouth referral behavior. *Journal of Consumer Research, 14*(3), 350–362.

Brown, J., Broderick, A. J., & Lee, N. (2007). Word of mouth communication within online communities: conceptualizing the online social network. *Journal of Interactive Marketing, 21*(3), 2–20.

Burkhardt, M. E. (1994). Social interaction effects following a technological change: a longitudinal investigation. *Academy of Management Journal, 37*, 868–896.

Chan, K. W., & Li, S. Y. (2009). Understanding consumer-to-consumer interactions in virtual communities: the salience of reciprocity. *Journal of Business Research, 63*(9/10), 1033–1040.

Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty. *Journal of Marketing, 65*(2), 81–93.

Chevalier, J. A., & Mayzlin, D. (2006). The effect of word of mouth on sales: online book reviews. *Journal of Marketing Research, 43*(3), 345–354.

Choi, S. M., & Rifon, N. (2002). Antecedents and consequences of Web advertising credibility: a study of consumer response to banner ads. *Journal of Interactive Advertising, 3*(1), 12–24.

Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: compliance and conformity. *Annual Review of Psychology, 55*(1), 591–621.

Cova, B., Pace, S., & Park, D. J. (2007). Global brand communities across borders: the warhammer case. *International Marketing Review, 24*(3), 313–329.

Davis, A., & Khazanchi, D. (2008). An empirical study of online word of mouth as a predictor for multi-product category e-commerce sales. *Electronic Markets, 18*(2), 130–141.

Dick, A., & Basu, A. (1994). Customer loyalty: toward an integrated conceptual framework. *Journal of the Academy of Marketing Science, 22*(2), 99–113.

Doney, P., & Cannon, J. P. (1997). An examination of the nature of trust in buyer-seller relationships. *Journal of Marketing, 61*(2), 35–51.

East, R., Hammond, K., & Lomax, W. (2008). Measuring the impact of positive and negative word of mouth on brand purchase probability. *International Journal of Research in Marketing, 25*(3), 215–224.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: an introduction to theory and research*. Reading: Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50.

Goldsmith, R. E., & Horowitz, D. (2006). Measuring motivations for online opinion seeking. *Journal of Interactive Advertising, 6*(2), 1–16.

Griskevicius, V., Cialdini, R. B., & Goldstein, N. J. (2008). Applying (and resisting) peer influence. *MIT Sloan Management Review, 49*(2), 84–88.

Gump, B. B., & Kulik, J. A. (1997). Stress, affiliation and emotional contagion. *Journal of Personality and Social Psychology, 72*(2), 305–319.

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion. Studies in emotion & social interaction*. New York: Cambridge University Press.

Hatfield, E., Rapson, R. L., & Le, Y. L. (2009). Primitive emotional contagion: recent research. In J. Decety & W. Ickes (Eds.), *The social neuroscience of empathy* (pp. 19–30). Boston: The MIT Press.

Heehyoung, J., Olfman, L., Islang, K., Joon, K., & Kyungtae, K. (2008). The influence of on-line brand community characteristics on community commitment and brand loyalty. *International Journal of Electronic Commerce, 12*(3), 57–80.

Hennig-Thurau, Gwinner, K. P., Walsh, G., & Gremler, D. (2004). Electronic word-of-mouth via consumer opinion platforms: what motivates consumers to articulate themselves on the internet? *Journal of Interactive Marketing, 18*(1), 38–52.

Hennig-Thurau, T., & Walsh, G. (2003). Electronic word-of-mouth: motives for and consequences of reading customer articulations on the internet. *International Journal of Electronic Commerce, 8*(2), 51–74.

Ho, J. Y. C., & Dempsey, M. (2010). Viral marketing: motivations to forward online content. *Journal of Business Research, 63*(9–10), 1000–1006.

Hovland, C. I., Janis, I. L., & Harold, H. K. (1953). *Communication and persuasion*. New Haven: Yale University Press.

Howard, D. J., & Gengler, C. (2001). Emotional contagion effects on product attitudes. *Journal of Consumer Research, 28*(2), 189–201.

Hsu, C.-L., & Lin, J. C.-C. (2008). Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management, 45*(1), 65–74.

Keller, K. L. (1998). *Strategic brand management: building, measuring, and managing brand equity*. Englewood Cliffs: Prentice-Hall.

Kim, S. T., Lee, C. K., & Hwand, T. (2008). Investigating the influence of employee blogging on IT workers' organisational citizenship behaviour. *International Journal of Information Technology & Management, 7*(2), 178–189.

Kozinets, R. V. (2002). The field behind the screen: using netnography for marketing research in online communities. *Journal of Marketing Research, 39*(1), 61–72.

Kozinets, R. V., de Valck, K., Wojnicki, A. C., & Wilner, S. J. S. (2010). Networked narratives: understanding word-of-mouth marketing in online communities. *Journal of Marketing, 74*(2), 71–89.

Liu, Y., & Sutanto, J. (2012). Buyers' purchasing time and herd behavior on deal-of-the-day group-buying websites. *Electronic Markets, 22*(2), 83–93.

Lee, J., & Lee, J.-N. (2009). Understanding the product information inference process in electronic word-of-mouth: an objectivity-subjectivity dichotomy perspective. *Information & Management, 46*(5), 302–311.

Lee, M., & Youn, S. (2009). Electronic word of mouth (eWOM). *International Journal of Advertising, 28*(3), 473–499.

Leender, R. T. A. J. (2002). Modeling social influence through network autocorrelation: constructing the weight matrix. *Social Networks, 24*(1), 21–47.

Lindell, M., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology, 86*(1), 114–121.

Marsden, P. (1998). Memetics and social contagion: Two sides of the same coin. *Journal of Memetics-Evolutionary Models of Information Transmission, 2*(2), 171–185.

MacKenzie, S. B., Lutz, R. J., & Belch, G. E. (1986). The role of attitude toward the Ad as a mediator of advertising effectiveness: a test of competing explanations. *Journal of Marketing Research, 23*(2), 130–143.

Muñiz, A. M., & O'Guinn, T. C. (2001). Brand community. *Journal of Consumer Research, 27*(4), 412–432.

Nielsen (2010). Global trends in online shopping - A Nielsen global consumer report. Available at www.nielsen.com.

Nielsen (2012). State of the media: The social media report 2012. Available at www.nielsen.com.

Nonnecke, B. & Preece, J. (2001). Why lurkers lurk."in *Seventh Americas Conference on Information Systems,* Boston, 1521–1530.

Nowak, A., Szamrej, J., & Latané, B. (1990). From private attitude to public opinion: a dynamic theory of social impact. *Psychological Review, 97*(3), 362–376.

Olson, M. A., & Fazio, R. H. (2004). Trait inferences as a function of automatically activated racial attitudes and motivation to control prejudiced reactions. *Basic & Applied Social Psychology, 26*(1), 1–11.

Park, C., & Lee, T. M. (2009). Information direction, website reputation and eWOM effect: a moderating role of product type. *Journal of Business Research, 62*(1), 61–67.

Pavlou, P. A., & Dimoka, A. (2006). The nature and role of feedback text comments in online marketplaces: implications for trust building, price premiums, and seller differentiation. *Information Systems Research, 17*(4), 391–412.

Petty, R. E., & Cacioppo, J. T. (1981). *Attitude and persuasion: classic and contemporary approaches*. Dubuque: William C. Brown.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891.

Preece, J., Nonnecke, B., & Andrews, D. (2004). The top five reasons for lurking: improving community experiences for everyone. *Computers in Human Behavior, 20*(2), 201–223.

Price, V. (1989). Social identification and public opinion: effects of communicating group conflict. *Public Opinion Quarterly, 53*(2), 197–224.

Putrevu, S. (2008). Consumer responses toward sexual and nonsexual appeals: the influence of involvement, need for cognition (NFC), and gender. *Journal of Advertising, 37*(2), 57–70.

Rau, P. L., Li, Y., & Li, D. (2009). Effects of communication style and culture on ability to accept recommendations from robots. *Computers in Human Behavior, 25*(2), 587–595.

Salganik, M. J., Dodds, P. J., & Watts, D. J. (2006). Experimental study of inequality and unpredictability in an artificial cultural market. *Science, 311*(5762), 854–856.

Salmon, C. T., & Oshagan, H. (1990). Community size, perceptions of majority opinion, and opinion expression. In L. A. Grunig & J. E. Grunig (Eds.), *Public relations research annual, 2* (pp. 157–171). NJ: Lawrence Erlbaum.

Schau, H. J., & Gilly, M. C. (2003). We are what we post? self-presentation in personal web space. *Journal of Consumer Research, 30*(3), 385–404.

Shang, R.-A., Chen, Y.-C., & Liao, H.-J. (2006). The value of participation in virtual consumer communities on brand loyalty. *Internet Research, 16*(4), 398–418.

Singh, T., Veron-Jackson, L., & Cullinane, J. (2008). Blogging: a new play in your marketing game plan. *Business Horizons, 51*(4), 281–292.

Spielmann, N., & Richard, M.-O. (2012). How captive is your audience? defining overall advertising involvement. *Journal of Business Research, 66*(4), 499–505.

Steele, C. M. (1988). The psychology of self-affirmation: sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental and social psychology, 21* (pp. 261–302). New York: Academic Press.

Tajfel, H., & Turner, J. C. (1985). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.

Van Lear, T., & De Ruyter, K. (2010). In stories we trust: How narrative apologies provide cover for competitive vulnerability after integrity-violating blog posts. *International Journal of Research in Marketing, 274*(2), 164–174.

Voss, K. E., Spangenberg, E. R., & Grohmann, B. (2003). Measuring the hedonic and utilitarian dimensions of consumer attitude. *Journal of Marketing Research, 40*(3), 310–320.

Wrightsman, L. (1960). Effects of waiting with others on changes in level of felt anxiety. *Journal of Abnormal and Social Psychology, 61*(September), 216–222.

You, W., Xia, M., Liu, L., & Liu, D. (2012). Customer knowledge discovery from online reviews. *Electronic Markets, 22*(3), 131–142.

Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of Consumer Research, 12*(3), 341–352.