Can Implicit Association Test Help in Explaining the EWOM of Competitive Brands?

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Abstract
The objective of this paper is to investigate the potential of the Implicit Association Test (IAT) in explaining the dynamics of electronic word of mouth (eWOM) in highly competitive and strongly established brand community environments, specifically focusing on the smartphone industry. Smartphones present a fertile ground for studying how implicit attitudes influence consumer behaviors, particularly in the digital space because it is a very competitive market. Our results indicate that, in the presence of implicit attitudes, eWOM concerning one brand is shaped not only by direct factors related to that brand but also by implicit attitudes and eWOM associated with competing brands.

Keyword: Implicit Association Test, EWOM, smartphones

Introduction
In marketing research, the concept of attitude is frequently used to assess consumers' judgments of a brand. Attitudes are divided into explicit attitudes and implicit attitudes (Fiorenza et al., 2023; Belboula and Ackermann, 2021; Cuny et al., 2021; Fuduric et al., 2022; Ackermann and Mathieu, 2015; Madhavaram and Appan, 2010). Coming from cognitive psychology, the explicit/implicit distinction differentiates between explicit memory, which enables the intentional retrieval of information in a conscious manner, and implicit memory, which facilitates the accomplishment of a task without involving the intentional and conscious retrieval of information (Schacter, 1987). Greenwald and Banaji (1995) further extended this distinction by introducing the concepts of (a) explicit social cognition and (b) implicit social cognition to analyze attitudes. Explicit attitudes guide deliberate, reflective behavior, whereas implicit attitudes influence spontaneous and automatic behavior (Capelli and Thomas, 2021). Implicit attitudes are especially predictive when individuals lack the opportunity, time, or motivation to consciously reflect on their actions (Fazio and Olson, 2003; Friese et al., 2006; Gibson, 2009) because they are spontaneous and automatic and do not require the use of attentional capacities (Dovidio et al., 1997). Keller (1993) emphasizes the importance of measuring both explicit and implicit attitudes to fully understand consumer perceptions of brands at both conscious and unconscious levels, in order to understand their associations as a whole. Implicit and explicit attitudes are present simultaneously for the same object (Wilson et al., 2000) and their joint study facilitates the prediction of behavior. This led us to:
H1 : explicit attitude is correlated with implicit attitude.

While previous research has established the role of implicit and explicit attitudes in predicting consumer behavior (Wilson et al., 2000; Greenwald and Banaji, 1995), several gaps remain. First, most studies focus predominantly on either explicit attitudes or implicit attitudes without integrating their joint effects on behaviors like eWOM (electronic word-of-mouth). Moreover, while Brunel et al. (2004) showed that implicit attitudes predict brand recognition and preference beyond explicit attitudes, limited attention has been paid to how these attitudes

interact in competitive brand contexts. Additionally, the influence of rival brand fans' behaviors, such as negative eWOM, on the focal brand's eWOM remains underexplored (Ilhan et al., 2018). So, we hypothesize that implicit attitudes will explain eWOM in the same way as explicit attitude:

H2 : Explicit and implicit attitudes explain eWOM.

Competitive brands are being evaluated in comparison to each others (Hickman and Wards, 2008; Liao et al., 2023) and so are the events that they generate and the way consumers express their opinions and sentiments online, hence the following hypothesis:

H3: eWOM of a brand consumer is nurtured by the eWOM of the competitive brand consumers.

Conceptual frameworks that connect short-term behaviors, such as online consumer sentiment, with long-term implicit and explicit attitudes are notably absent. Our study addresses these gaps by examining the interplay between implicit and explicit attitudes and their joint impact on eWOM in a competitive brand environment. Specifically, we hypothesize that explicit and implicit attitudes are not only correlated (H1) but also jointly explain eWOM (H2). Furthermore, we posit that eWOM for a focal brand is influenced by the eWOM generated by consumers of competing brands (H3). By integrating insights from prior studies and extending them to competitive contexts, this article contributes to a more comprehensive understanding of consumer behavior in digital environments.

Methodology

The Implicit Association Test (IAT) is used to assess attitudes on the basis of the reaction times of the individual subjected to association tasks using Inquisit 3 software (MILLISECOND SOFTWARE).

An IAT requires the use of two opposing stimuli and we used two target brands. In this study, we focused on two leading smartphone brands, Apple and Samsung, as opposing stimuli. 205 Participants were presented with pleasant and unpleasant attributes, and their reaction times to these stimuli were measured. The goal was to assess their implicit attitudes toward these brands by calculating the time it took them to associate positive or negative attributes with each brand (Ackermann & Mathieu, 2015). The TAI consists of 9 blocks. Only blocks 3, 5, 7 and 9 are considered in calculating the final scores, the others being training blocks. Blocks 3 and 7 consist of 20 trials and blocks 5 and 9 consist of 40 trials. Each trial consists of associating one of the brand stimuli (in this case Apple or Samsung) with the pleasant or unpleasant stimulus. For example, in block 3, participants had to associate "Apple" with pleasant stimuli and "Samsung" with unpleasant stimuli. Each association is tested and reaction times are collected.

The reaction times were used to calculate IAT scores (Greenwald et al., 2003), which indicate whether a participant's implicit attitude favors Apple or Samsung. A score greater than zero (Score IAT > 0) implies that the participant holds a more favorable implicit attitude toward Apple compared to Samsung. In addition to the IAT, participants completed a questionnaire using multi-item scales on a 5-point Likert scale (1: strongly disagree to 5: strongly agree) to measure explicit attitudes (Lee et al., 2018), word of mouth (WOM) (Grégoire and Fisher, 2006), eWOM (Muntinga et al., 2011; Park et al., 2010), and purchase intention (Dodds et al., 1991). The explicit attitude score was calculated by subtracting the mean attitude score for Samsung from the mean attitude score for Apple.

Results

The data were analyzed with SPSS 8. Table 1 presents the main results.

Table 1 : Multiple linear regression results

Variables	Model 1	Model 2	Model 3	Model 4
R²	0.700	0.695	0.694	0.702
F-value	116.509	152.538	151.705	118.033
p-value (Sig.)	<0.001	<0.001	<0.001	<0.001
Implicit Attitude (IAT)	-0.412 (t = -2.010, p = 0.046)	-0.440 (t = -2.143, p = 0.033)	-	-0.444 (t = -2.183, p = 0.030)
Explicit Attitude (Score)	-0.073 (t = -1.807, p = 0.072)	-	-0.079 (t = -1.953, p = 0.052)	-
Purchase Intention (Samsung)	0.054 (t = 1.208, p = 0.228)	0.106 (t = 2.999, p = 0.003)	0.052 (t = 1.138, p = 0.257)	0.109 (t = 3.125, p = 0.002)
eWOM Sharing (Samsung)	0.737 (t = 19.150, p < 0.001)	0.728 (t = 18.971, p < 0.001)	0.744 (t = 19.277, p < 0.001)	0.698 (t = 17.310, p < 0.001)
Negative eWOM (Apple)	-	-	-	0.110 (t = 2.264, p = 0.025)

Data analysis revealed a lack of significant correlation between IAT scores and explicit attitudes, except in the case of Samsung. Specifically, we found a weak correlation between IAT and explicit attitude for Samsung ($r = 0.124$, $p = 0.077$), but no significant relationship for Apple ($r = -0.002$, $p = 0.974$). These findings led to the partial rejection of H1, indicating that explicit attitudes may not always mirror implicit attitudes, especially in competitive environments like that of Apple and Samsung.

To better understand the factors influencing eWOM, we tested multiple models, each incorporating different combinations of explanatory variables: Implicit Attitude (IAT), Explicit Attitude (Score Attitude), Purchase Intention for Samsung, positive eWOM sharing for Samsung, and negative eWOM for Apple. Our analysis demonstrated that both IAT scores and explicit attitudes significantly contributed to explaining eWOM for Samsung. The selected variables explain between 69.4% and 70.2% of the variance in positive eWOM for Samsung.

Among the models, Model 4 emerged as the most robust, explaining 70.3% of the variance in eWOM ($R^2 = 70.3\%$). This model highlighted the significance of the following variables: IAT score, sharing eWOM, purchase intention for Samsung, and eWOM for Apple. Consequently, both H2 and H3 were supported by the data. eWOM sharing for Samsung remains the most significant predictor (**coeff. = 0.698**, $t = 17.31$, $p < 0.001$), followed by Purchase Intention for Samsung (**coeff. = 0.109**, $t = 3.125$, $p = 0.002$). IAT is still significant and negative (**coeff. = -0.444**, $t = -2.183$, $p = 0.030$), and negative eWOM for Apple becomes significant in this model (**coeff. = 0.110**, $t = 2.264$, $p = 0.025$). These results suggest that negative eWOM about Apple might have an indirect effect on positive eWOM for Samsung, highlighting the impact of brand rivalries on consumer interactions online.

Overall, the analysis demonstrates that eWOM for Samsung is influenced by a mix of consumer attitudes, both implicit and explicit, as well as competitive dynamics with Apple. The

significance of sharing eWOM and purchase intention for Samsung highlights the active role that brand advocates and potential buyers play in promoting the brand online. Additionally, the influence of negative eWOM for Apple underscores the importance of brand rivalries in shaping consumer interactions and online conversations.

Conclusion

This exploratory research aims to explain the diffusion of eWOM in order to understand how consumers interact online with brands while being implicitly inspired by rival brands. Indeed, we show that eWOM involves the implicit attitude towards the brand but also the negative eWOM of the competing brand.

From a theoretical point of view, this research highlights the interactions between consumers and brands, and more specifically in the context of WOM formation. We argue that eWOM formation is based on the opposition with a competing brand,. This is a new way to analyze how eWOM is formed, and completes works involving competitive brands (Liao et al., 2023). Our research also presents methodological implications. We used the IAT in a new way to understand eWOM to enrich the scope of this methodology. Finally, our research findings provide managerial insights. The way eWOM is made is essential for brands because this is a strategic point in the marketing relationship with consumers. In real life, consumers always refer to brands and their competitors in their market. While brands may see it as a disadvantage because of continuous comparison, we show here that it can be an advantage, because eWOM about a brand is also built up in opposition to competing brands. Furthermore, brands must be careful not to neglect the quality of their relationship with consumers, as part of the construction of eWOM is implicit and automatic without the consumer being aware of it.

Future research

This research also has its limitations. Only two brands (Apple and Samsung) were involved in the exploratory research. It would be interesting to replicate this research with other brands in different product categories. Furthermore, this research focuses on eWOM and other studies could analyze classic WOM or examine other related concepts such as brand love or brand attachment to further investigate the formation of eWOM. In addition, we have to take into account the context and respondent's motivation and the way they can influence brand value destruction through eWOM, in the sense of Labrecque et al. (2022). Finally, future research can investigate the influence of brand personality and consumers personality on the extent of eWOM, as pointed by Lopez et al (2020)

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