The impact of customer engagement behaviors and majority/minority information on the use of online reviews

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<A>INTRODUCTION

The development of consumer-to-consumer (c2c) communication has been one of the most significant events in marketing over the past decade (Babić et al. 2016). This is evident from the staggering volume of social media communications created by consumers, which includes 300 hours of YouTube videos uploaded/minute, over 347,000 tweets via Twitter/minute, and over 4,100,000 "likes" by Facebook users/minute (Domo 2015). Furthermore, Domo (2014) reports approximately 24,000 reviews are posted on Yelp each minute. Finally, TripAdvisor recently reported 350 million unique visitors accessed the over 320 million reviews posted on TripAdvisor.com (TripAdvisor 2015).

Not only have online reviews become ubiquitous, but they have also become a critical part of consumer decision-making (Dellarocas 2003; Floyd et al. 2014; Sridhar and Srinivasan 2012). For example, a recent study conducted by Dimensional Research (2013) found that 88 percent of respondents indicated their buying decisions were impacted by online reviews. This effect held regardless of the valence of the review with 90 percent of buyers reporting they were influenced by positive reviews and 86 percent indicating they were influenced by negative reviews. This impact is derived, in part, from the fact that consumers view online reviews as the second most credible source of information behind "earned" sources (i.e. word-of-mouth from friends and family; Nielsen 2012).

During this same time frame that consumers have been increasing their reliance on online sources of information, marketers have begun to move beyond traditional assessments of success such as satisfaction and loyalty to ones that take into account factors more closely aligned with online consumer behaviors. One construct that has gained a great deal of interest among marketers is customer/consumer engagement (CE) with a number of different, but related, definitions of CE having been suggested (see Brodie et al. (2011), Hollebeek, Srivastava, and Chen (2019) and Pansari and Kumar (2016) for overviews).

Given the growing importance of CE, along with the role of online reviews on consumer decision-making, the goal of this research is to assess the extent to which CE drives the impact of online review information. We overcome limitations of previously proposed measures of CE (e.g. Vivek, Beatty, and Morgan 2012; Kumar and Pansari 2016; Hollebeek, Glynn, and Brodie 2014) by using eye-tracking methodology in which we equate time-on-task (i.e. time spent viewing elements of an online review) as CE. Our overall goal is to investigate the extent to which CE, as measured by time spent on various elements of an online review, impacts consumer decision-making. As such, this research attends to research suggestions put forth by Vivek et al. (2014) to extend the concept of CE to online reviews. In addition, we challenge recent research by De Langhe et al. (2016) who conclude "the average user rating lacks validity as a measure of objective quality" (p.

826) and side with Kozinets (2016) who suggests that by focusing only on overall summary scores, De Langhe et al. (2016) overlook the "diversity" of information contained in the qualitative portion of online reviews. Specifically, Kozinets (2016) suggests the full complement of information contained in online reviews (e.g. overall summary ratings, qualitative comments) "offer consumers a social conversation, a communications environment that they use not only to talk about the objective and subjective characteristics of products and services, but also to socialize and communicate about themselves" (p. 835; see also Hollebeek, Juric, and Tang 2017).

In addition, we set our research within a rich stream of social psychology literature that focuses on the role of majority/minority information on decision-making (Tormala and DeSensi 2009). For example, a substantial number of articles have focused on the primacy of majority information (e.g. Mackie 1987), the impact of minority information (e.g. Moscovici 1980) or recognize the importance of both (e.g. Baker and Petty 1994; Martin and Hewstone 2008). It is this latter perspective that provides the conceptual background for our study. Following Martin and Hewstone's (2008) source–context–elaboration (SCE) model, we believe that consumers will utilize both majority and minority opinions when making decisions based on online review information. It should be noted that although the literature acknowledges the potential for minority influence, it is more broadly accepted that the majority view will have a larger impact (Cialdini 1993). Thus, the question remains as to how each type of social information (majority and minority information) impacts consumer satisfaction with a decision and at what point might the minority opinion begin to overtake the majority opinion in terms of its role in consumer decision-making. In other words, how does customer engagement with a website potentially impact the extent to which majority and minority information is taken into account when assessing services?

Our chapter offers a number of contributions. First, we provide one of the first attempts to explain how c2c online review information impacts consumer satisfaction and decision-making. As such, we shed light on the process through which CE, defined as time spent assessing online review information impacts consumer responses. To date, most research in this area has focused on the impact of online reviews on outcomes, as opposed to the mechanisms by which these outcomes occur. By incorporating various types of information typically found in online reviews (e.g. summary quantitative evaluations and qualitative comments), we respond to Kozinets' (2016) call to include the diversity of information contained in online reviews.

Second, by incorporating both experimental and eye-tracking techniques, our research design allows us to provide a behavioral-based explanation for our results. Using eye-tracking technology allows us to not only look at outcomes but also examine the decision-making heuristic (or what information they process during the encounter). The remainder of this chapter is structures as follows. First the theoretical background is presented, including a discussion about customer engagement, majority and minority influence, and the source-context-elaboration model. Next, the hypotheses are presented. Third, the data collection, statistical method, and results are presented. Finally, a general discussion including managerial and theoretical implications that arise from this research is provided.

<A>THEORETICAL BACKGROUND

Consumer engagement has gained a great deal of interest among researchers and practitioners over the past decade (Pansari and Kumar 2016; Hollebeek, Srivastava, and Chen 2019). As might be expected from any emerging concept, there have been a number of different perspectives taken regarding what constitutes CE, however it can be argued that most of these derive in one way or another from papers by Brodie et al. (2011) or van Doorn, et al. (2010). Brodie et al. (2011) develop five Fundamental Propositions they suggest define the domain of CE. These propositions suggest CE is a "psychological state" (FP1) that occurs "within a dynamic, iterative process" (FP2) and plays a role "within a nomological network of service relationships" (FP3). Furthermore, CE is a "multidimensional construct" made up of "cognitive, emotional, and behavioral dimensions" (FP4) that "occurs within a set of situational conditions generating different CE levels" (FP5; (Brodie et al. 2011, p. 258); see also Hollebeek, Srivastava, and Chen (2019) and Brodie et al. (2013). Brodie et al. (2011) suggest that CE be defined as a "psychological state that occurs by virtue of interactive, cocreative customer experiences with a focal agent/object (e.g. a brand) in focal service relationships" (p. 260).

Van Doorn, et al. (2010) approach CE from a different perspective. Specifically, these authors derive a definition based on the idea of "to engage," which they suggest has a more behavioral focus. Furthermore, they set their conceptualization within prior research related to customer attitudes such as trust, satisfaction, and commitment. They define customer engagement behaviors (CEB) as customer behaviors that go beyond transactions and that are a "customer's behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers" (van Doorn et al. 2010, p. 254). They go on to suggest five CEB dimensions, including valence, form, scope, nature of the impact, and customer goals. However, in contrast to the focus on CE as a psychological state (Brodie and Hollebeek 2011), van Doorn, et al. (2010) clearly come down on the side of CE as being focal behaviors that customers engage in with respect to a specific brand (Groeger, Moroko, and Hollebeek 2016). This is consistent with Vivek, Beatty, and Morgan (2012), who suggest CE has to do with the "intensity of an individual's participation in and connection with an organization's offerings and/or organizational activities" (p. 127). It is this perspective that drives our approach to CE. As noted, we approach CE as being directly related to behaviors taken by consumers towards the use of online reviews, more specifically the time spent looking at various elements of online reviews. Here we look both as what can be considered majority information (e.g. overall evaluations) and minority information (e.g. qualitative reviews that may be counter the overall evaluation). In the next section we provide a review of majority/minority research, focusing on Martin and Hewstone's source-context-elaboration model.

<B>Majority and Minority Influence

Research regarding the effects of majority and minority influence has focused on persuasion (Tormala and DeSensi 2009) with two primary perspectives driving investigations on these topics (Baker and Petty 1994). Initial work assumed that majority

influence would have a greater impact than minority influence (Gardikiotis 2011). For example, Deutsch and Gerard (1955) proposed majorities would have more impact due to their ability to provide some idea of what should be considered "correct," particularly in ambiguous decision contexts. The majority might also have a greater impact due to consumers wanting to identify more with that group (Kelman 1958). More recent support for the primacy of the majority has come from Cialdini's (1993) discussion of social proof that suggests social influence can bend decisions towards group conformity. In an online review context, the majority opinion could be represented by any overall summary score provided, such as the "average" score provided for items by Amazon.com.

Eventually, researchers began to explore the impact of minority influence with much of this being led by Moscovici (1980, 1985). His dual process model suggests both majorities and minorities can have influence, albeit for different reasons. Majority influence would occur due to a comparison process in which people would want to be seen as identifying with the majority. As the comparison process is driven by a desire to conform to the majority opinion, little time would be spent evaluating the majority perspective, resulting in minimal attitude change. As to the impact of minority influence, Moscovici (1980, 1985) suggested this would occur due to a validation process. Since people would likely be predisposed to not desire association with the minority, influence would not be due to identification, as with majority influence, but rather would occur only after taking time to evaluate the minority perspective and evaluate the validity of it. Moscovici (1980) states that in this case "one's main preoccupation [is] to see what the minority saw, to understand what it understood" (p. 215).

<B>Source-Context-Elaboration Model

In an attempt to help reconcile the unequivocal nature of the findings regarding majority and minority influence, Martin and Hewstone (2008) developed the source-context-elaboration (SCE) model. This model provides the theoretical basis for our research. The SCE model proposes the amount of message elaboration or influence that will occur is a function of two factors: (1) source status (i.e. minority or majority) and (2) influence "context." Specifically, the SCE model attempts to explain (1) the processes under which majority/minority influence occur, (2) the manner in which context influences the situation and impacts the processes, and (3) the consequences in terms of any attitude change that might occur. As our focus is in understanding the impact of majority/minority opinion in an online review context, we are primarily concerned with the first two elements of the model.

<C>Underlying processes

Martin and Hewstone (2008) suggest two "guiding principles" regarding when the majority or minority will influence people. The first is the "majority default position" that predicts when faced with influence attempts from majority and minority groups, people will generally follow the majority due to the majority opinion serving as a heuristic cue. It is often easier to acquiesce to the majority position and individuals largely prefer to identify with the majority rather than the minority (Martin and Hewstone 2008). The second

principle is referred to as the "minority behavioral style threshold" and becomes relevant if the influence attempt by the minority is more consistently communicated and distinctive (e.g. counter to the majority view). Under those conditions, elaboration of the minority position will occur. In the context of our study, we expect that customers will attend to summary evaluations (majority information) more readily than specific qualitative comments. However, as consumers attend more to qualitative comments that are counter to the majority opinion, we will see a lessening of the majority effect and a corresponding increase in minority influence.

<C>Contextual impact

While the two processes reviewed above help explain the extent to which majority/minority influence will have an impact, the SCE model also suggests contingencies to those effects, specifically the context in which the influence attempt occurs. Here, context is similar to Petty and Cacioppo's (1986) idea of the "elaboration continuum," which suggests that elaboration of arguments goes from "no thought about the issue-relevant information presented, to complete elaboration of every argument, and complete integration of these elaborations into the person's attitude schema" (Petty and Cacioppo 1986, p. 129). The SCE model proposes an individual's location on this continuum is determined by their ability and motivation to think about the issue. Simply put, when the context is low (e.g. a repeat purchase or the purchase of an inexpensive product/service) very little elaboration occurs and the majority default option will lead to the majority opinion being the primary source of influence. However, when the context is high (e.g. a more complex and/or more expensive purchase situation) the majority default option is overridden. Martin and Hewstone (2008) point out that while most research has focused on the extreme ends of the continuum, most influence attempts occur in intermediate contexts (Gardikiotis 2011). We expand on this idea by considering the length of customer engagement (i.e. time spent reviewing online comments; Hollebeek, Glynn, and Brodie 2014) and determine the levels at which majority and minority comments impact customer satisfaction.

Specifically, and consistent with the SCE, we suggest that when the decision context is classified as intermediate (i.e. there is a moderate level of ability and motivation to engage in decision-making), consumers will engage in a sufficiently high level of elaboration that attitude change can occur. At this point, it is still indeterminate as to which group, majority or minority, will exert the greatest influence. Though individuals can engage in elaboration, they may choose not to, in which case the majority default option applies and the majority position will be used as a heuristic leading to little attitude change (Martin and Hewstone 2008). However, consistent with Moscovici's (1980) conversion theory, if the behavioral style threshold is met, individuals will engage in higher levels of elaboration of the minority position.

In summary, the SCE model proposes that both the majority and minority can have influence and that this is in large part due to the context of the elaboration. When the context is low, no elaboration will occur and there will be no attitude change. When the context is high, elaboration of both the majority and minority opinion will occur and attitude change will be based on which group makes the strongest argument. However, under intermediate contexts, the type most common to consumer decision-making

(Gardikiotis 2011), individuals may choose to engage in either no elaboration, resulting in no attitude change, or if the behavioral style threshold is breached, they will engage in elaboration of the minority perspective, which may lead to an attitude change toward the minority position.

HYPOTHESIS DEVELOPMENT

Majority and Minority Opinion Influence on Customer Satisfaction

Regarding online reviews, majority information aligns with normative influences. In these situations, individuals are conforming to the expectations or decisions of others by simply using automatic (i.e. nonelaborative), or heuristic processing – "a limited mode of information processing that requires less cognitive effort and fewer cognitive resources" (Eagly and Chaiken 1993, p. 327). Rather than systematically processing information, heuristic processing utilizes basic decision rules for making determinations of acceptable behavior. Additionally, in line with the concept of social proof, it is generally more acceptable to rely on a consensus view in making determinations of subsequent actions (Cialdini 1993, 1999). In other words, a strong consensus (e.g. 90% satisfied or a "5 out of 5" star rating) serves as a signal to decision makers that the majority decisions are correct (Cialdini 1999; Benedicktus et al. 2010).

In this case, consensus information is influential as it provides "shared, valid assessments of reality" (Wood et al. 1994, p. 326). Previous research has demonstrated that consensus scores can significantly impact purchase intentions and perceptions of trust (Benedicktus et al. 2010; Bolton, Katok, and Ockenfels 2004; Cialdini and Goldstein 2004) as these higher overall ratings increase consumers' confidence and self-efficacy related to their decision-making (Chintagunta, Gopinath, and Venkatraman 2010; Liu 2006; Sun 2012). Further, those holding majority perspectives have been shown to be influential, as they are perceived to provide valuable resources (e.g. information and competence; Moscovici 1980). Thus, in the case of online reviews, we believe a positive majority opinion is likely to have a positive influence on consumers' expected satisfaction. We propose:

<hypothesis>

H1: The majority opinion positively influences consumers' level of expected satisfaction.

</hypothesis>

When reading online reviews, consumers will generally look at the overall rating score first and then perhaps proceed to look at the qualitative comments (Sridhar and Srinivasan 2012). Given that their first impression is tied to the overall feedback score (Ein-Gar, Shiv, and Tormala 2012), consumers may feel the need to verify that their initial

evaluation was accurate by reading qualitative reviews that might affirm/challenge that evaluation. As previously mentioned, minority opinions are considered to be the qualitative ratings that diverge from the majority opinion. These comments offer more specific information to the marketplace by expanding the depth of the information in the form of an explanation for the corresponding rating (Kozinets 2016; Sridhar and Srinivasan 2012). The varying content can aid the buyer in the decision-making process leading to additional processing of the given information, resulting in a more thorough assessment of a situation (Nemeth 1986).

In contrast to consensus information, visual attention to minority information aligns with the idea of informational influences, whereby individuals accept information or explanations from others (e.g. qualitative feedback contrary to majority opinion) as evidence of 'correctness' (Mackie 1987) or 'reality' (Wood et al. 1994) when trying to find the correct solution (Deutsch and Gerard 1955). Previous research has shown that individuals, who are exposed to divergent views or minority influence, recall more information and show more flexibility in thought, including more original solutions (Nemeth 1986). Exposure to minority viewpoints can cause individuals to consider different perspectives, evaluate more alternatives, and re-examine proposed viewpoints, given that the minority opinions are consistent and committed to the divergent view (Martin and Hewstone 2008). However, it is necessary that an individual devotes time and attention to processing a divergent viewpoint in order to understand the intended view. As more attention is paid to divergent views, it is more likely the buyer will perceive that this thorough evaluation of alternatives will provide a more thoughtful decision. Thus, it is likely that consumers who utilize minority information will have higher expected satisfaction with their purchase decision. Therefore, we propose the following:

<hypothesis>
H2: The minority opinion positively influences consumers' level of expected satisfaction.

</hypothesis>

<B>Moderating Effects of Customer Engagement

The "eye-minded hypothesis" suggests an individual's visual attention indicates what a person focuses on when making a decision (Just and Carpenter 1976). Therefore, our research uses the fixation duration, or the "processing time" spent observing specific stimuli (Just 1980) as a measure of customers' engagement (Hollebeek, Glynn, and Brodie 2014), which serves as a potential boundary condition for the relationships suggested by H1 and H2. Wedel and Pieters (2007) suggest that longer fixation periods indicate increased time processing and interpreting stimuli. Additionally, information extracted during such fixations is directly related to higher-order cognitive processes, which can affect consumers' memories, behavioral intentions, and attitudes (Wedel 2008; Naidoo and Hollebeek 2016).

While focusing on the overall feedback score may serve to reinforce consumers' decisions to support the majority (Sridhar and Srinivasan 2012), we believe prolonged attention to the minority opinion can influence, or even reverse, consumers' attitudes. In

line with previous research (Martin and Hewstone 2008), the more time spent focusing on the minority feedback score, the less impact the majority opinion will likely have. We believe that this is likely the situation when consumers spend more time observing and processing the minority opinions rather than the majority opinions, particularly when the overall feedback score is believed to be low. Thus, when the majority feedback is generally perceived as adequate (e.g. 90 percent satisfied), consumers are willing to ignore neutral, or even negative, responses in favor of the majority solution. However, when the majority feedback is perceived to be representative of lower satisfaction (e.g. 70 percent satisfied), consumers may turn to other indicators, such as minority qualitative feedback, in order to find a solution.

Ziegler, Diehl, and Ruther (2002) propose that when there are contradictory (i.e. incongruent) minority and majority reviews, decision confidence (i.e. self-efficacy) decreases and message scrutiny and elaboration processing increases. If consumers are motivated to process information, negative framing is thought to be more impactful and easier to recall (Floyd et al. 2014; Shiv, Britton, and Payne 2004). Moreover, although both positive and negative evaluations are shown to influence consumers' evaluations (Sridhar and Srinivasan 2012), individuals tend to process negative information more thoroughly and weigh it as more important than equally-valenced positive information (Baumeister et al. 2001; Mizerski 1982; Peeters and Czapinski 1990; Taylor 1991; Hollebeek and Chen 2014). When negatively framed information is counter to that of the majority, consumers will likely spend more time processing and interpreting this negative information, as opposed to positively framed information (Petty and Cacioppo 1979). However, it is not only that this information is negative, but also that in being seen as contrary to the majority opinion, the minority information is seen as novel, and thus more valuable (Baker, Donthu, and Kumar 2016; Fiske 1980; Wu 2013). Moreover, these divergent opinions have been shown to impact purchase decisions as a result of the additional attention paid to or time spent processing them (Zhang, Wedel, and Pieters 2009). Thus, we develop the following proposition:

<hypothesis>

H3: The effect of the majority opinion is moderated by customer engagement on the

minority information, to the extent that as minority information gains a larger share of

time spent reviewing information, the effects of the majority opinion are reduced.

</hypothesis>

It is possible for minority dissent to draw attention to particular stimuli and initiate a subsequent search for information (Nemeth and Rogers 1996), which leads to a more systematic processing of information (Gu, Park, and Konana 2012; Zaichkowsky 1985). This is especially true when consumers view arguments by the minority as strong (Tormala and DeSensi 2009). Along with message consistency and clarity, time is a necessary component for divergent views to develop and gain support (Nemeth 1986). As divergent views persist over time, it is likely that a buyer will consider more alternatives for matching their needs with available products or services. This consideration allows for a deeper understanding of a product or service via a more thorough processing of information

(Ziegler, Diehl, and Ruther 2002). As a prospective buyer spends more time evaluating minority opinions, it is likely that the relationships between minority opinions and expected satisfaction will be stronger, along with the minority opinion becoming the dominant factor in purchase decisions. Therefore, we propose the following:

<hypothesis>

H4: The effect of minority information on expected satisfaction is strengthened by CE on

the minority to the extent that their impact is increased when consumers become more

engaged with minority information relative to majority information.

</hypothesis>

<B>Methods

<C>Participants and procedure

This study has two primary goals. First, we set a baseline for the effects of both the majority and minority on expected satisfaction. As suggested by the SCE model, we expect that both will impact consumer satisfaction with a decision (H1–H2). The second goal is to investigate if the impact of minority influence becomes stronger than the majority and if so, when that occurs (H3–H4). The SCE proposes that for intermediate elaboration conditions such as the one we study (e.g. making a decision regarding a hotel booking), there comes a "tipping" point where the minority influence attempt takes precedence over the majority.

To test the effects proposed in the first four hypotheses, we developed a 2 (Majority Opinion: Positive, Neutral) x 2 (Minority Opinion: Neutral, Negative) between-participants design. Participants were recruited from classes being taught by one of the co-authors at a large public university. Participants registered for a time that required them to come to the eye-tracking lab at the university. They were first provided with a broad overview of the study and engaged in a calibration exercise to ensure the eye-tracking device was able to accurately pick up their eye movements. The eye-tracking lab allowed us to capture measurements of their time on task when reviewing the content of the experiment, thus enabling us to capture the specific stimuli on which consumers are focusing, expanding upon self-reported consumer measures (Meißner, Musalem, and Huber 2016). Seventy-nine students participated in this research study and were balanced across the four experimental cells.

Following random assignment, participants were presented a brief purchase scenario that manipulated the two factors. This scenario had the participants imagine they were reviewing hotels for a potential spring break trip and were provided with a typical landing page that provided a brief overview of the hotel, majority feedback in the form of an index that indicated the percentage of customers who had a satisfactory experience with the hotel (90 percent in the positive condition and 70 percent in the neutral condition), and qualitative feedback. The qualitative feedback was presented as a listing of 10 recent

qualitative comments left by visitors. The first seven comments were held constant across conditions and were all positive. The remaining three comments, representing the negative versus neutral minority information manipulation, were presented with either neutral or negative statements. All statements were pre-tested to ensure that they were viewed as positive, neutral, or negative.

<C>Measurement

The amount of time that participants spent viewing the stimuli was measured using total duration (fixation time) scores for the areas of interest that were identified a priori. These scores were extracted by using Tobii's screen based eye-tracking technology, which allowed us to capture gaze patterns for all participants as they reviewed the experimental scenario. To allow for the testing of H3 and H4, we identified areas of interest specifically isolated to the last three qualitative comments, which were manipulated to be neutral or negative (see Figure 18.1 for an exemplar). Time spent reviewing this area of interest was captured and used in developing H3 and H4. The mean time reviewing minority information was 20.99 seconds with a standard deviation of 17.62 seconds, and the mean for majority information was a mere 0.56 seconds. In addition to measuring the duration of time dedicated to reviewing the minority opinion, we also measured expected satisfaction. For this variable, we assessed it with a single item that read: "I would anticipate being satisfied with my stay at Hotel De La Ville," which was adapted from Oliver (1980).

Figure 18.1 Exemplar hotel review manipulation and areas of interest for eye-tracking investigation/

Hotel Details

Total Percent of all Guests who Recommend this Hotel:	70%

Recent Guest Reviews

Most Recent Guest Reviews (Sorted From Best to Worst)

★★★★★ One of the finest hotel rooms that you will ever stay in. This hotel was absolutely beautiful. The rooms, lobby, and pool were all perfect.

★★★★★ Truly excellent service. The hotel employees were complete professionals and took great care of us.

★★★★★ Do yourself a favor and stay at this hotel. Professional service, big rooms, beautiful lobby, and prime location. This hotel has it all.

★★★★☆ Hotel De La Ville is the nicest hotel I have stayed in. The rooms were incredible.

★★★★☆ The service at the hotel was very good. The staff took great care of us upon arrival and the concierge was really helpful throughout our stay.

★★★★☆ So convenient! The hotel is located in the heart of the action and was the perfect starting point for a great vacation.

★★★★☆ Overall great experience. The hotel and its employees were wonderful.

★☆☆☆☆ TERRIBLE! After waiting for 3 hours for them to get our room ready, we were told they were sold out!

★☆☆☆☆ Hotel gave away our room to another customer despite our confirmed reservation and they refused to help us find another place. STAY AWAY!!!

★☆☆☆☆ Worst hotel experience ever. They refused to honor our reservation and asked us to leave the property, because we were not guests of the hotel.

<C>Results

Given our hypotheses and 2 x 2 design with a continuous, objective moderator, we opted to test our hypotheses using a single regression equation predicting expected satisfaction. Specifically, each manipulated factor was binary coded where 1 = the more positive conditions and 0 = more negative conditions. In addition to these two independent variables, we also included the main effect for the duration of time spent reviewing the minority information and the two product terms representing the interactions. Results revealed that these variables explained 24 percent of the variance in expected satisfaction. All variables in the equation were significant with the exception of the majority opinion X duration interaction ($p > .05$), failing to support H3. More specifically, majority ($b = .26$, p< .01) and minority ($b = .31$, p< .01) influence both significantly affected expected satisfaction, providing support for H1 and H2. Moreover, duration spent on the minority information had a direct and negative effect on expected satisfaction ($b = -0.38$, p< .01). Finally, the interaction effect between duration and minority opinion was significant ($b = .43$, $p< .01$) and in the direction consistent with the propositions, providing support for H4. The results of the hypotheses testing are included in Table 18.1.

Table 18.1 Results of hypothesis testing

Hypothesized Paths	b	R^2
H1: Majority Opinion → Expected Satisfaction	.26**	.24
H2: Minority Opinion → Expected Satisfaction	.31**	
H3: Majority*Duration of Time Spent Reviewing Minority Opinion → Expected Satisfaction	.07	
H4: Minority*Duration of Time Spent Reviewing Minority Opinion → Expected Satisfaction	.43**	

Note: *p < .05, **p < .01.

To better understand the significance of this interaction we probed further by using floodlight analysis (Spiller et al. 2013). Although first proposed by Johnson and Neyman (1936), recent advances making floodlight analysis more accessible has led to an increase in the usage of the technique. In essence, floodlight analysis is an extension of the more commonly used "spotlight analysis" which allows the test of significance for a coefficient at specific values of another variable, most commonly at plus/minus one standard deviation of the mean. Floodlight analysis allows the entire range of a construct to be assessed, thus highlighting where the effect is significant and where it is not. The results of this analysis reveal that the effects of minority opinion get progressively stronger as duration increases. However, at low levels of duration (less than 15.62 seconds) minority opinion no longer significantly affected expected satisfaction. This result demonstrates that for minority feedback consumers must dedicate a significant amount of time reviewing it for it to impact outcome decisions. See Figure 18.2 for the floodlight graph.

Figure 18.2 Regions of significance for the effect of minority feedback across levels of duration
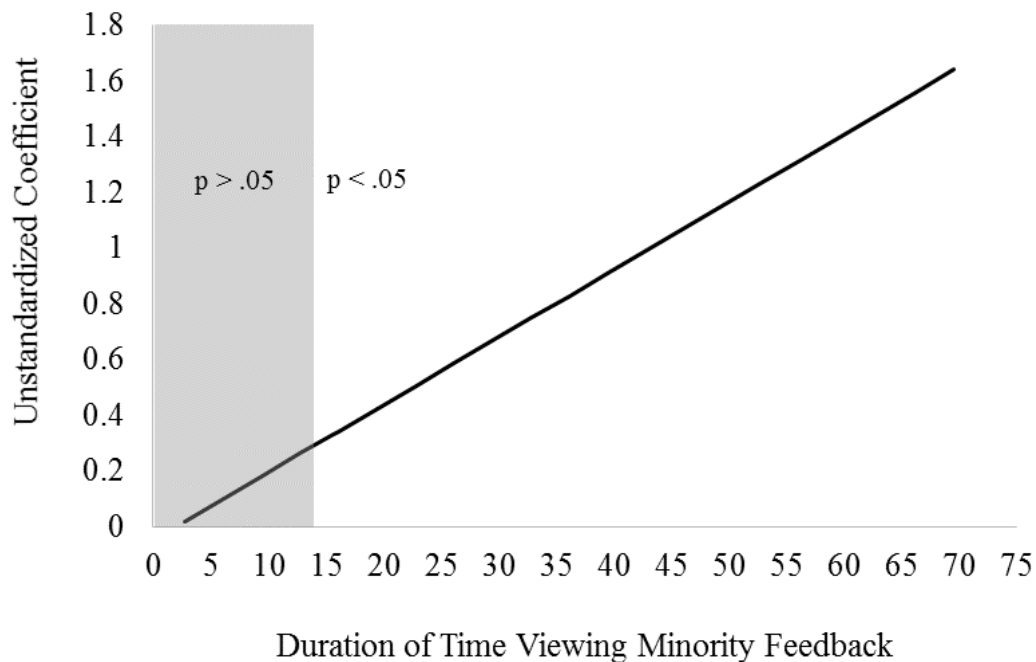
<B>Discussion

Our results provide strong initial support for the joint effects of majority and minority opinion in consumer decision-making. In addition to the baseline effects, tests of the moderating effects of duration reveal that as consumers spend additional time reviewing opinions from minority, the influence of these statements became very strong and significant and substantially outpaced the strength of majority opinion. These results provide a key contingency to the consistent and dominant effects of majority or consensus opinion in decision-making and suggest that under certain conditions, minority opinion can drive consumption decisions. Moreover, to our knowledge, this is the first study to employ eye-tracking technology as part of a between-subjects design and use the metrics from the technology as processing moderators in the research model.

<A>GENERAL DISCUSSION

In this research we demonstrate that the effects of online review majority and minority opinion on expected satisfaction are contingent on the time consumers are engaged in processing minority information. In doing so, the results demonstrate conditions where the effects of majority and minority information are buffered. In this study, the results revealed that the effects of minority information are contingent on the duration of time consumers spend reviewing the information. Specifically, the results revealed that once consumers spend more than 15.61 seconds reviewing the minority feedback, there begins to be an impact on expected satisfaction. However, for consumers that spend less than 15.61 seconds, minority influence has no impact. The results of this research have implication for both marketing practice and research, which we discuss next.

<B>Managerial Implications

<C>Understanding consumers' processing of online reviews

For managers wondering how consumers process online reviews, our results demonstrate that both majority and minority information have a substantial impact on customers' evaluations of firms online. As a result, and as suggested by Kozinets (2016), managers looking to monitor and manage online feedback should focus on both majority feedback and consensus information. Specifically, it is not adequate to blindly monitor overall satisfaction scores without accounting for the potential of minority feedback. Our results suggest that despite a strong majority score, isolated negative feedback could damage consumer's evaluations. To proactively control this, managers should try to intercept dissatisfied consumers during their visits and initiate recovery from any failures, thus reducing the potential for them to complain via online channels. While employing successful service recovery strategies is a relatively obvious solution at the individual customer level, our research provides additional evidence that a failed encounter might not just impact the focal customer's future behavior, but could also have damaging network effects if they post about their negative experience online. This is likely to occur when customers share their negative experiences in online reviews, leading to a decrease in value creation opportunities with a service-dominant logic framework (Hollebeek, Srivastava, and Chen 2019).

<C>Presentation of online information

While our results revealed that both majority and minority feedback can impact customers' expected satisfaction, majority feedback still remains the dominant driver of these outcomes after accounting for the amount of time consumers spend processing information. More specifically, despite the fact that consumers only spent 0.56 seconds looking at the majority feedback score, it still had an effect comparable with the minority feedback score that was processed for 21 seconds on average. In addition, the results of the floodlight analysis revealed that the minority information could only impact consumer evaluations if they focused on it for more than 15 seconds. Taken together, the results suggest that the

single most important information for a review site to highlight is this majority feedback score. This could be particularly important when consumers access these sites on mobile devices when the screen has dimensional limitations as well as shorter consumer evaluation times (Viswanathan et al. 2017).

Finally, firms like Priceline and TripAdvisor must focus on dual goals of providing seemingly unbiased reviews, but in a manner that encourages consumers to make a reservation, as their business models rely on booking fees. Thus, for firms of this nature, our results offer obvious implications. Specifically, given the potential damaging impact of negative minority feedback, this information should be more difficult to access by consumers. To accomplish this, firms could require consumers to log into their accounts to review negative information but provide free and complete access to positive reviews. Similarly, minority feedback could have default sorting from most positive to most negative rather than chronologically. Doing this would create conditions where consumers might never be exposed to negative minority feedback and even in situations where they access it, it could result in less time being spent reviewing it, potentially causing this negative information to have less of an impact.

<B>Theoretical Implications

Our chapter makes important theoretical contributions, particularly in light of recent research by De Langhe et al. (2016) that calls into question the efficacy of online review information. Taking the perspective advanced by Kozinets (2016), our research explicitly incorporates a broader definition of online review information and finds that consumers can gain value from online reviews if they go beyond simple summary scores. Our results are in line with those suggested by Martin and Hewstone's (2008) SCE model, which suggests both majority (summary score) and minority (qualitative comments counter to the summary score) can influence consumers' decision-making. But more importantly, by incorporating eye-tracking we are able to provide evidence of when the influence "tips" from being majority-driven to being impacted by the minority. Thus, our results provide some empirical support for Kozinets' (2016) call that researchers take into account the broader diversity of online review information.

We will not suggest that our results in any way invalidate those reported by De Langhe et al. (2016). However, the research reported in this paper does open the door to the possibility that looking at a single element of what is contained in an online review, particularly an overall summary judgment, limits the impact as it misses the full range of information contained in reviews. In other words, while we believe the work by De Langhe et al. (2016) is important, it is also critical not to narrow our focus on aggregate scores. Our research provides a pioneering effort to demonstrate how consumers use both majority and minority information in forming service evaluations and provides an advancement over recent research in the area by showcasing the need to account for more than just majority feedback if we want to understand the complexities of online decision-making for services.

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