

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/324841252>

Using the Evaluative Space Grid to better capture manifest ambivalence in customer satisfaction surveys

Article in *Journal of Retailing and Consumer Services* · April 2018

DOI: 10.1016/j.jretconser.2018.04.008

CITATIONS

9

READS

373

2 authors:



Alice Audrezet

Institut Supérieur de Gestion

16 PUBLICATIONS 382 CITATIONS

SEE PROFILE



Béatrice Parguel

Paris Dauphine University

119 PUBLICATIONS 1,640 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Influencers authenticity [View project](#)



Overpackaging [View project](#)

Using the Evaluative Space Grid to better capture manifest ambivalence in customer satisfaction surveys

Alice AUDREZET (corresponding author)

Institut Supérieur de Gestion, Paris

147, avenue Victor Hugo

75 116 Paris, FRANCE

alice.audrezet@isg.fr

tel : +33 1 56 26 10 10

Béatrice PARGUEL^b

CNRS, DRM UMR 7088, Paris-Dauphine University

Place du Maréchal de Lattre de Tassigny

75775 PARIS Cedex 16, FRANCE

beatrice.parguel@dauphine.fr

Audrezet, A. & Parguel, B., (2018). Using the Evaluative Space Grid to better capture manifest ambivalence in customer satisfaction surveys, *Journal of Retailing and Consumer Services* 43, 285–295. <https://doi.org/10.1016/j.jretconser.2018.04.008>

Using the Evaluative Space Grid to better capture manifest ambivalence in customer satisfaction surveys

Abstract

Considering that midpoints on linear scales wrongly aggregates indifferent, uncertain and ambivalent responses, this research investigates the ability of the Evaluative Space Grid (ESG) to disentangle uncertainty from manifest ambivalence. Uncovering situations in which respondents hold simultaneous and conflicting but certain evaluations, manifest ambivalence reveals of utmost significance for market researchers. Using a mixed approach, both qualitative and quantitative, this research confirms that the ESG isolates manifest ambivalence in its upper-right zone, and provides implications for practitioners involved in service quality and consumer satisfaction measurement.

Key words

Customer satisfaction, Ambivalence, Evaluative Space Grid, Measurement tool

1. Introduction

Consumer satisfaction measurement is an important issue in market research. In the long run, it serves as a barometer of business performance that predicts other key marketing variables, such as future sales, profit and loyalty (Chen, 2012; Kasiri et al., 2017; Ruiz Diaz, 2017). In the short run, it provides a useful customer feedback to manage service quality and improve marketing plans (Engler et al., 2015; Fonseca, 2009). Hence, service providers and retailers almost systematically measure customer satisfaction shortly after any online purchase (e.g., Amazon.com, Booking.com) or offline services consumption (e.g., TripAdvisor.com). They usually do so in a global way using linear five-point rating scales. In line with most service researchers, who consider customer satisfaction as a unidimensional overall reflective construct (e.g., Evanschitzky and Wunderlich, 2006; Fonseca, 2009), such scales are effective in capturing polarized evaluations, either strongly positive or negative, but display serious problems related to their midpoint (Kaplan, 1972; Thompson et al., 1995).

Concretely, this midpoint inappropriately aggregates indifferent responses (low positivity and low negativity) with uncertain (“I don’t know” answer) and ambivalent (the simultaneous experience of positivity and negativity) responses. As an illustration, does a rating of three stars out of five stars on Hotels.com mean that the customer did not care about the hotel and only evaluated it to get a 10% discount voucher on the next booking on Hotels.com? That the customer was uncertain because he or she did not experience all its amenities (e.g., breakfast, spa)? Or that he or she was satisfied with its design but dissatisfied with its equipment?

Reflecting different evaluations (Baka et al., 2012; Nadler et al., 2015), indifferent, uncertain and ambivalent responses bear different information, and should be treated in different ways by market researchers. Specifically, indifferent responses tell that respondents are not involved toward the object under evaluation (Baka et al., 2012; Nadler et al., 2015) when uncertain responses are shown to be poor behavioral predictors (Bizer et al., 2006; Fazio,

1987; Tormala and Rucker, 2007). As such, these responses should be excluded from the survey, making their identification of utmost importance.

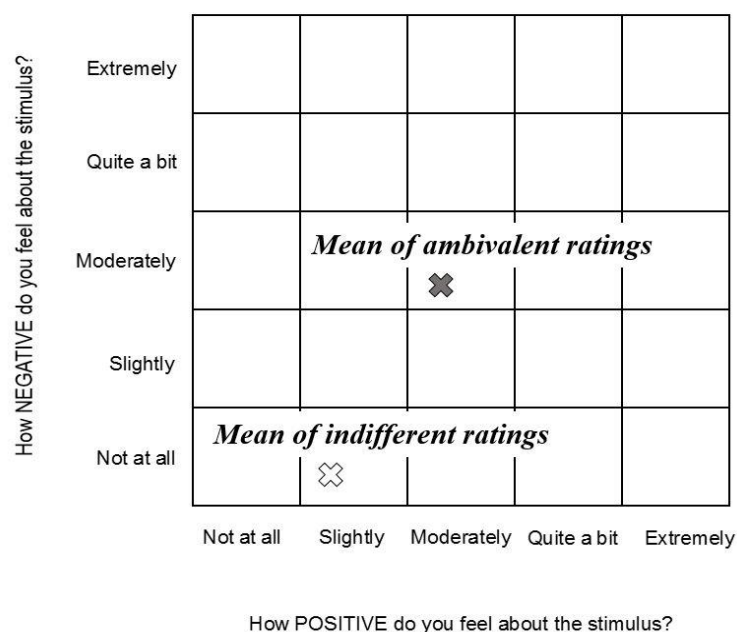
Ambivalent responses are more promising, especially “manifest ambivalent” responses that uncover situations in which respondents are clearly aware of conflicting positive and negative information (Heuvinck, 2012). Those responses should be distinguished from “anticipated ambivalent” responses, where individuals only anticipate that there may exist conflicting information of which they are unaware (Heuvinck, 2012; Priester et al., 1996, 2007).

Compared with anticipated ambivalent responses, manifest ambivalent responses are therefore more significant, being able to alert on the need to identify effective levers for improvement to retain consumers that are more likely to be loyal than clearly unsatisfied ones (Olsen et al., 2009). Still, to isolate manifest ambivalence, a separate evaluation of the object attributes using a multi-item scale is not satisfying as customers can still clearly experience ambivalence toward each attribute. For example, when measuring satisfaction after a stay at a hotel, one can assess the specific satisfaction toward the room, but the customer may still experience both positive and negative reactions toward this specific attribute, being satisfied with the comfort of the room, but dissatisfied with the wifi connection in the room. Besides, overall ratings remain the evaluative standard to date, which calls for further exploration on how to capture manifest ambivalence in overall customer satisfaction surveys.

Conceptually derived from the Evaluative Space Model (Cacioppo et al., 1997, 2011), and subsequently applied in psychology (Cacioppo et al., 2009; Hunter et al., 2008; Larsen and McGraw, 2011; van Reekum et al., 2011), nutrition (Kwak and Lee, 2016) and business research (Andrade and Cohen, 2007; Audrezet et al., 2016; Kerns, 2011; Kim et al., 2017), the Evaluative Space Grid (ESG) proposed by Larsen et al. (2009) could help solve this methodological issue. From a practical perspective, the ESG comprises a 5×5 grid that measures the degree of both positivity and negativity of an evaluation within a bi-dimensional

matrix. Contrary to other ambivalence measures, this innovative tool has drawn the attention of researchers from various domains because its specific matrix form allows a simultaneous assessment of positivity and negativity, thus providing the first measurement solution perfectly echoing ambivalence definition. Indeed, selecting a single cell, respondents must assess their positive and negative reactions at the same time. As such, Larsen et al. (2009) showed that the ESG disentangles ambivalent from indifferent responses along the grid's diagonal, with indifferent responses isolated at the bottom left of the grid and ambivalent ones at the center (see Figure 1).

Figure 1. Mean of indifferent and ambivalent ratings (adapted from Larsen et al., 2009)



However, Larsen et al. (2009) did not distinguish between manifest and anticipated ambivalence, nor anticipate that the center of the grid could still attract uncertainty. To fill the gap, this research explores whether the ESG can isolate manifest ambivalence in the context of customer satisfaction surveys. To do so, testable hypotheses are derived from the methodological literature and a preliminary exploratory qualitative study based on 12 semi-

directed interviews suggesting that the different types of evaluations can be located on the ESG depending on respondents' levels of uncertainty and involvement with the object under evaluation. A quantitative study then locates manifest ambivalence in the upper-right zone. As such, this research provides important implications for practitioners involved in market research, such as helping them understand what lies behind the average performances they get from linear rating scales, or better target marketing plans depending on customers' attitudes.

2. Literature review

Uncertainty and ambivalence have long been confounded (e.g., Mehling, 1959; Pelham, 1991; Suchman, 1950). On the one hand, they tend to correlate positively, leading to the rationale that ambivalence generates uncertainty (Bassili, 1996; Gross et al., 1995; Petrocelli et al., 2007; Tormala and Rucker, 2007). On the other hand, they manifest similar characteristics, such as being less predictive of behavior and less resistant to persuasive intent than polarized evaluations (Armitage and Conner, 2000; Clarkson et al., 2008; Petrocelli et al., 2007; Wu and Shaffer, 1987). However, recent research argues that a person can be certain that he or she evaluates some attributes positively and other attributes negatively, hence be certain about holding ambivalent evaluations (Clarkson et al., 2008; Krosnick and Petty, 1995; Petrocelli et al., 2007; Priester et al., 2007). For example, if a customer evaluates a recent flight on a low-cost company, he or she can be highly certain of both the positive (e.g., low price) and negative (e.g., low level of service onboard) features of his or her experience. The next sections present the conceptual definition of uncertainty and ambivalence, and the solutions proposed to capture them, including the ESG.

2.1. Uncertain evaluations

Customer satisfaction surveys often assume that respondents can answer any question with absolute certainty (Converse, 1970; Hanemann, 1984). Still, research has long recognized that respondents can experience difficulties in providing definite evaluations and underscored the concept of response certainty (e.g., Dubois and Burns, 1975; Tormala and Rucker, 2007).

Certainty refers to “the sense of conviction with which one holds one’s attitude” (Petrocelli et al., 2007, p.30), meaning one’s subjective perception that one is certain of one’s evaluation of an object. As such, response certainty is a metacognitive attribute of people’s evaluations.

Respondents who feel competent or sufficiently informed to take a position are likely to display response certainty (Converse, 1970; Coombs and Coombs, 1976; Dubois and Burns, 1975), as are those who have already formed their evaluation (Antil, 1983; Converse, 1970).

Response certainty usually increases with age (Helson and Wink, 1992), perceived social support for one’s evaluation (Visser and Mirabile, 2004) or direct experience with the object under evaluation (Gross et al., 1995; Wu and Shaffer, 1987). It also increases with involvement with the issue at stake and is associated with more extreme evaluations, either positive or negative (Antil, 1983; Suchman, 1950). Besides, it decreases with task utility and complexity (Regier et al., 2014).

Response certainty is crucial for improving the statistical precision of econometric models and the conclusions drawn from them (Li and Mattsson, 1995; Regier et al., 2014). Failing to account for respondents’ uncertainty may bias analyses, results and their interpretations.

Statistical solutions allow accommodating for respondents’ uncertainty in contingent valuation surveys (Alberini et al., 2003; Li and Mattsson, 1995) and choice experiment surveys (Lundhede et al., 2009; Regier et al., 2014). Excluding uncertain respondents from analyses also yields higher correlations between evaluations and behaviors (Antil, 1983;

Bassili, 1996; Clarkson et al., 2008; Sample and Warland, 1973; Tormala and Rucker, 2007) as uncertain responses are less persistent and powerful (Krosnick and Petty, 1995). Still, excluding uncertain respondents first requires identifying them, which has proved difficult. Consumers displaying low confidence in their evaluations tend to select midpoints on linear rating scales, thus aiding in their identification if these midpoints were not actually selected for other reasons. The literature has proposed several solutions to cope with this issue.

Referring to the old debate between odd-point and even-point scales (e.g., Converse, 1970; Garland, 1991; Presser and Schuman, 1980), one solution is to suppress the midpoint, resulting in the gain of a substantive quantity of informative answers (Schuman and Presser, 1996). The problem with this solution is that when respondents are forced to choose a polarized rating, they transfer uncertain answers to one side of the scale or the other in a way that is not normally distributed but biased depending on the topic of the research (Garland, 1991; Worcester and Burns, 1975) or respondents' attitude (Nowlis et al., 2002). When respondents are indifferent, the omission of the midpoint leads to a random answer transfer. In contrast, when respondents are ambivalent, the transfer is guided by the valence of their evaluation on the most important attribute of the object under evaluation (Nowlis et al., 2002). In the end, midpoint omission strongly biases data collection and does not offer a satisfying solution to disentangle uncertainty from ambivalent and indifferent answers.

Research also explores the possibility of measuring uncertainty apart from the rating scale providing a separate "I don't know" modality, which also presents limitations. First, this modality only partially captures situations in which respondents are uncertain (Hawkins and Coney, 1981; Hawkins et al., 1988). Second, it can also be selected by lazy but certain respondents, therefore resulting in a loss of informative answers (Bishop et al., 1983; DeRouvray and Couper, 2002; Schuman and Presser, 1996). Third, it only considers two degrees of uncertainty (i.e., "I know" versus "I don't know"), not respecting its continuous

nature. To correct this, research suggests using continuous assessments with a separate item following each statement of a scale (e.g., Olsen, 1999; Sample and Warland, 1973) or an overall multi-item rating of the degree of uncertainty at the end of the evaluation (Bizer et al., 2006; Fazio and Zanna, 1978; Norman, 1975). Still, it also stresses the difficulty to come out with such a complex metacognition (Bassili, 1996), which also increases filling time (Yan and Tourangeau, 2008), discouraging researchers to adopt them.

2.2. Ambivalent evaluations

From a wide perspective, ambivalence is characterized by the simultaneous presence of positive and negative evaluations about an attitudinal object (Larsen and McGraw, 2011; Larsen et al., 2001; Thompson et al., 1995). It is common in overall evaluations that, by definition, imply processing several attributes. Indeed, offers sophistication, which often entails packages including a main product, surrounded by numerous options or peripheral services (Lusch and Vargo, 2012), increases the likelihood of evaluating certain attributes positively, and others negatively (Fazio, 2007). Interestingly, the positive and negative components of ambivalent evaluations are only moderately negatively correlated (Cacioppo et al., 1997; Kwak et al., 2013), meaning that overall evaluations are not reducible to a unidimensional continuum, and that multiple possible combinations of positive and negative reactions exist in respondents' minds.

Conner and Sparks (2002) precise two defining criteria. First, an ambivalent evaluation must consist of positive and negative reactions of at least moderate intensity. When the reactions are less than moderate, respondents are said to be indifferent toward the object under evaluation (Thompson et al., 1995). Second, it must be made of positive and negative reactions that are similar in intensity; otherwise, the evaluation tends to polarize toward

positivity or negativity. Convincing research has however challenged these criteria, showing that ambivalent evaluations could also be made of positive and negative reactions that are not similar in intensity, and even of only positive or only negative (i.e., univalent) reactions (e.g., Priester and Petty, 1996; Priester et al., 2007). As a rationale, Priester and colleagues (1996, 2007) explain that individuals sometimes anticipate that there may exist conflicting information of which they are unaware. This type of ambivalence has been recently qualified as “anticipated ambivalence” by Heuvinck (2012) to uncover situations in which respondents are uncertain of their responses, because they anticipate that conflicting positive and/or negative information could exist. In contrast, “manifest ambivalence” uncovers situations in which respondents are clearly aware of conflicting positive and negative information (Heuvinck, 2012). To sum-up, Conner and Sparks’ (2002) defining criteria remain relevant, but only in the case of manifest ambivalence.

The distinction between “anticipated ambivalence” and “manifest ambivalence” results from the level of certainty associated with the evaluation. Because it is more certain, manifest ambivalence is more predictive of behavioral intentions and behaviors compared (Heuvinck, 2012). Following, if ambivalence and uncertainty are conceptually distinct, their inappropriate aggregation at the midpoint of linear scales prevent marketers to make appropriate decisions, which is an issue to deal with. Two main approaches have been developed in the literature to isolate ambivalence: 1) measuring felt ambivalence, i.e. the individual subjective impression of being torn about an attitudinal object (Lavine et al., 2000; Priester and Petty, 1996), using self-report scales (e.g., “I have mixed feelings about XX [object under evaluation]”), or 2) measuring potential ambivalence with two unipolar rating scales assessing separately the degrees of positivity (ranging from not at all positive to extremely positive) and negativity (ranging from not at all negative to extremely negative) (Kaplan, 1972; Thompson et al, 1995). In the latter case, the positive and negative ratings are then computed as different

ambivalence scores (see Thompson et al., 1995 for exhaustive details on their calculation). While potential ambivalence measurement solution is more in line with the conceptual definition of ambivalence, successively rating two intuitively antagonistic items might be disturbing for respondents, explaining why it has not been widely adopted (Kwak and Lee, 2016). Measures of felt and potential ambivalence appear lowly correlated (Priester and Petty, 1996; Thompson et al., 1995), because individuals are sometimes unaware of holding conflicting evaluations. Simultaneous access of both positive and negative reactions increases such awareness and therefore determines the strength of the correlation between felt and potential ambivalence (Newby-Clark et al., 2002). In this perspective, involvement with the object under evaluation is likely to facilitate simultaneity (Roese and Olsen, 1994), hence ambivalence, explaining why ambivalence is especially prevalent in situations of high involvement (Jewell et al., 2002).

Table I synthesizes the solutions that have been proposed to isolate ambivalence from uncertainty, their advantages and limitations.

Table I. Synthesis of the proposed solutions to capture uncertainty and ambivalence

	Solutions	Advantages	Limitations
To capture UNCERTAINTY	Midpoint omission with even-point scales (Garland, 1991; Nowlis et al., 2002; Schuman and Presser, 1996; Worcester and Burns, 1975)	Prompts respondents to select polarized answers, resulting in clearer results and recommendations	Is detrimental to data quality because of answer transfer on one side or the other side of the scale
	Addition of a separate “I don’t know” modality (Bishop et al., 1983; DeRouvray and Couper, 2002; Hawkins and Coney, 1981; Hawkins et al., 1988; Schuman and Presser, 1996)	Helps quickly identify the highly uncertain respondents	Fails to properly capture the uncertain evaluations and provides only a binary measure of certainty
	Addition of a continuous assessment of respondents’ degree of certainty (Bizer et al., 2006; Fazio and Zanna, 1978; Norman, 1975; Olsen, 1999; Sample and Warland, 1973)	Provides a valid measure of certainty	Appears as a methodological burden that increases filling time, resulting in researchers’ and practitioners’ reluctance to use it
To capture AMBIVALENCE	Self-report subjective feeling of ambivalence (Conner and Sparks, 2002; Lavine et al., 2000; Priester and Petty, 1996)	Values respondents’ subjective feelings	Suggests that respondents are aware of such complex feelings
	Ambivalence measurement through two unipolar rating scales, one for positivity and one for negativity (Breckler, 1994; Kaplan, 1972; Thompson et al., 1995)	Is theoretically consistent with the conceptual definition of ambivalence	Supposes to rate two intuitively antagonistic items, which could be puzzling for respondents

2.3. The ESG

The ESG is based on the Evaluative Space Model (Cacioppo et al., 1997, 2011), which suggests that assessing positivity and negativity involves two separable and partially distinct mechanisms. Indeed, different parts of the brain are activated in reaction to positive and negative stimuli, which explains why it is possible for people to be both happy and sad at the

same time (Larsen and McGraw, 2011, 2014; Larsen et al., 2001). This bi-dimensional approach has been validated in several domains, such as marital satisfaction (Mattson et al., 2007), patient satisfaction (Turner and Krizek, 2006), or services satisfaction (Audrezet et al., 2016; Tuten and August, 1998).

The ESG comprises a 5×5 grid that measures both the degree of positivity and negativity of an evaluation within a bi-dimensional matrix (see Figure 1). From a practical standpoint, one dimension of the matrix is dedicated to the measurement of respondents' degree of negativity (from not at all negative to extremely negative), and the other to the measurement of respondents' degree of positivity (from not at all positive to extremely positive). The combination of the two dimensions allows respondents to choose which of the grid's 25 cells best describes his / her evaluation. Contrary to the traditional "dissatisfaction/satisfaction" linear rating scale, this tool provides five combinations of equally positive and negative responses varying only in terms of intensity along the secondary diagonal.

The ESG has been validated with respect to the unipolar measurement of positivity and negativity, meaning that mean positive and negative ratings obtained with the ESG correlate almost perfectly with those obtained with unipolar measurements of positivity and negativity (Hunter et al., 2008; Kwak and Lee, 2016; Larsen et al., 2009). Larsen et al. (2009) showed that on the ESG, respondents rate ambivalent objects (e.g., Bill Clinton, capital punishment, exercise) both more positively and more negatively than indifferent objects (e.g., lettuce, wallpaper). The ESG therefore naturally disentangles ambivalent from indifferent responses, isolating ambivalent responses close to the center and indifferent ones at the bottom left (see Figure 1). Still, Larsen et al. (2009) did not identify uncertain responses on the ESG, nor isolate specifically manifest ambivalence.

To go further, this research explores whether the ESG can precisely locate manifest ambivalence in a customer satisfaction survey, extending the preliminary work of Audrezet et al. (2016). To do so, a preliminary qualitative study examines participants' interpretation of the ESG, leading to the formulation of hypotheses that are then tested using a quantitative study.

3. Preliminary qualitative study

3.1. Methodology

In line with Baka et al.'s (2012) qualitative exploration of the meaning of the midpoint on linear rating scales, we first approached the interpretation of the ESG through semi-directed interviews. More precisely, following Bolton's (1993) methodological proposition to pretest quantitative questionnaires, we used the verbal protocol method, which consists of subjects' general verbal descriptions of their cognitive processes and experiences (Ericsson and Simon, 1993). This method appears particularly well-suited to our objective since the cognitive processes at stake when filling the ESG might help understand the meaning attributed to its various zones. We thus invited a sample of 12 experts (see their profile in Appendix A) to think out loud while they were rating a satisfaction survey regarding different services (e.g., public transportation, insurance) using the ESG. We chose to rely on a sample of experts because the double effort of filling a survey using a new measurement tool and eliciting simultaneously the cognitive processes at stake might be very demanding (Payne, 1994). Face to face interviews were conducted, lasting between 35 and 75 minutes. The resulting data consisted of around 78,300 words, or 210 transcription pages.

The collected material was analyzed following the verbal protocol analysis guidelines provided by Ericsson and Simon (1993). Qualitative material was first broken up into short units of meanings, namely short phrases or segments. As an illustration, the answer “a lot of satisfaction and a lot of dissatisfaction means, this actually means a very strong opinion” (Elodie) was broken into two units of meaning, respectively made of the segments before and after the comma. Units of meanings were then coded based on their meaning and analyzed following a classical thematic content analysis (Denzin and Lincoln, 2005). More precisely, to explore the meanings associated with the different zones of the ESG, we categorized the units of meaning according to the part of the tool they refer to. As such, we identified four main zones associated with clear different meanings: “the polarized zones”, “the central zone”, “the upper-right zone”, and “the bottom-left zone” on the ESG. These different zones constitute the four main themes resulting from the analysis. The frequency of units of meaning enabled to identify sub-themes in order to interpret the meaning associated with the different zones of the ESG. As an illustration, the theme “the central zone” was divided into two sub-themes: “uncertainty” and “ambivalence”.

3.2. Results

Results are presented following the four themes identified through the thematic content analysis.

First, the ESG upper-left and lower-right zones are respectively associated with polarized negative and positive evaluations. The upper-left zone is associated with situations in which “individuals tend to have a negative opinion about the service under evaluation” (Elodie). At the opposite, the lower-right zone appears as “a zone of strong satisfaction” (Elodie), which captures her evaluation of “something [she] really likes” (Louisa).

Second, the participants largely commented on the central zone of the ESG, which they all associated with “I don’t know” answers, suggesting that respondents chose this zone by uncertainty. Some wanted to “avoid making a choice” (Paul) or “avoid harming anyone” (Charlotte) because they did not hold a “definite opinion” or “a really clear position” (Nabih). Participants also mentioned that, in this zone, “there are different positive and negative aspects in the evaluation” (Lucie). Thus, the central zone of the ESG mixes uncertainty with ambivalence, with participants unable to come up with a definite and clear answer and, therefore, unwilling to take any other position.

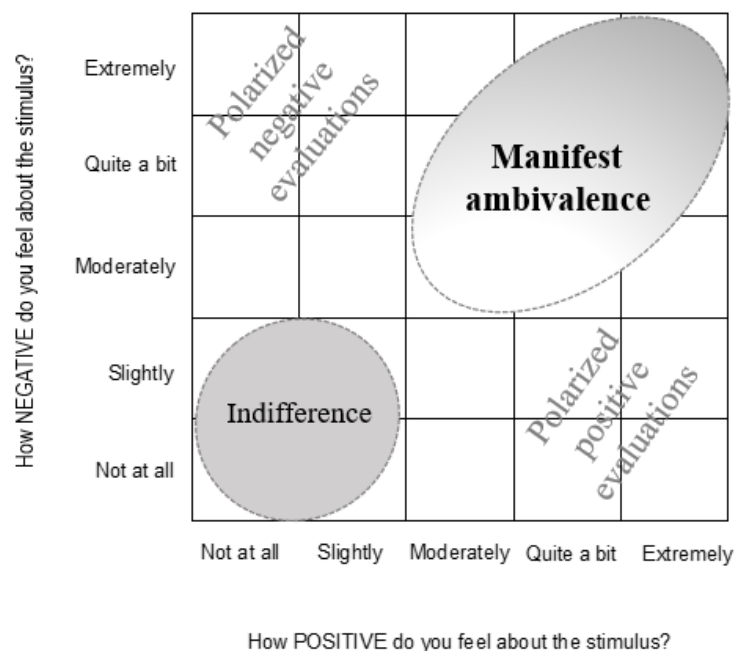
Third, the participants interpreted the upper-right zone of the ESG as an “ambivalence zone” (Nabih), “full of ambiguity” (Rachel). Anna illustrated it putting that “On the one hand I find the university restaurant satisfactory because it’s cheap and practical... but I also feel great dissatisfaction because it’s not wonderful and lacks variety”. Rachel mentioned “feelings [...] in both directions and so intense that they are completely paradoxical”. Both Anna and Rachel were clearly able to identify the positive and negative aspects of their evaluations, meaning that they were certain of having mixed responses. Nathalie went further in this regard: “It means that the respondent is involved, and that there are criteria, which are judged very negatively, and other criteria, which are judged very positively”. Marc’s discourse also referred to the idea of involvement: “The further you move upwards [to the upper-right zone], the more you are interested in the product or the more you are involved”. Thus, the upper-right zone of the ESG seems to display certain and involved ambivalent responses.

Fourth, the participants interpreted the bottom-left zone of the ESG as a zone of disinterest, “indifference” (Leila), and “total non-implication” (Najate) corresponding to “products for which [one has] very low expectations, such a light bulb or a battery” (Leila) or “boring products” (Marc). It is a zone displaying “few arguments, and if you don’t have any

arguments, it's because you don't care" (Louisa), which reflects a position "between 'this product does not interest me' and 'I am not concerned'" (Najate).

This preliminary qualitative exploration helped clarify the meanings of the different zones of the ESG. Polarized evaluations locate in the upper-left and lower-right zones. Corroborating Larsen et al.'s (2009) seminal work, the bottom-left zone is associated with respondents' indifference. Beyond, ambivalence appears in both the central and upper-right zones, with stronger uncertainty in the central zone, suggesting that manifest ambivalence would locate in the upper-right zone, while anticipated ambivalence would increase when approaching the central zone. Interestingly, respondents did not spot anticipated ambivalence in the other zones, which may suggest that anticipated ambivalence could be more difficult to verbalize compared with other types of evaluations (see Figure 2).

Figure 2. Interpretation of the different zones of the ESG



Interestingly, these findings rule out the simplifying assumption that the ESG could isolate ambivalent responses from uncertain ones in the context of customer satisfaction surveys.

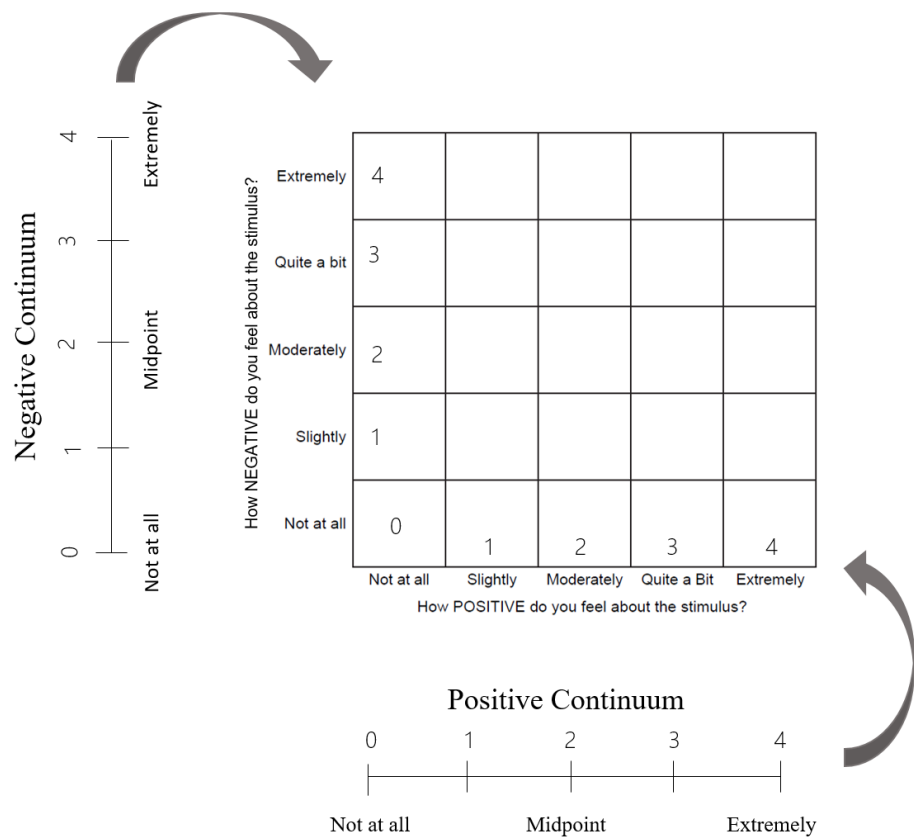
Uncertainty, as a metacognitive attribute, applies to different types of evaluations, such that ambivalence can be associated with varied levels of uncertainty. This echoes previous theoretical work on the distinction between manifest and anticipated ambivalence (i.e., Heuvinck, 2012; Priester et al., 1996, 2007). Focusing now on manifest ambivalence, it appears located in the ESG upper-right zone, and seems even clearer when going from the ESG midpoint to its upper-right corner, which is line with Conner and Sparks' (2002) defining criteria for ambivalence.

To test it further, we now propose a conceptual framework that focuses on the ESG upper-right diagonal, letting the exploration of its other zones to future research.

4. Conceptual framework

Manifest ambivalent responses uncover situations in which respondents are clearly aware of conflicting positive and negative information (Heuvinck, 2012). As such, they are not only certain, but also involved responses. Indeed, the probability to be both more positive and more negative increases with involvement (Jewell et al., 2002). Following, to locate manifest ambivalence along the ESG upper-right diagonal, we explore how respondents' uncertainty and involvement evolve along this diagonal. To do so, we use the fact that the ESG is made up of two unipolar continuums—a positive one and a negative one—combined into a bi-dimensional matrix, and draw on a methodological equivalency between the ESG and traditional linear scales (see Figure 3).

Figure 3. Methodological equivalency between unipolar rating scales and the ESG



Research shows that respondents displaying uncertainty tend to select the midpoint on linear rating scales (Antil, 1983; Katz, 1944; Olsen, 1999; Sample and Warland, 1973). Gross et al. (1995) also note that choosing extremities (i.e., an answer located at an extreme point of a linear rating scale) imply respondents' certainty. Following, the central zone of the ESG, which corresponds to the crossing of the midpoints of the two unipolar rating scales, should attract the more uncertain responses. Besides, its extreme zones, which correspond to the crossing of the extreme points of the two unipolar rating scales, should attract more certain responses.

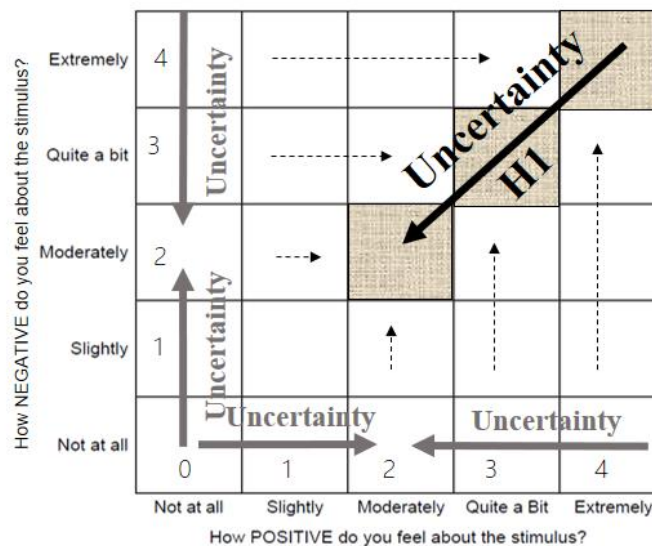
Following, the upper-right zone of the ESG should attract certain responses while its central zone should discard them, and the degree of uncertainty in the evaluation should decrease from the central zone to the upper-right corner along the ESG secondary diagonal. This

reasoning leads to formulate H1, which is consistent with the findings of the preliminary qualitative study:

H1. The degree of uncertainty in the evaluation has an influence on the position of a response on the ESG secondary diagonal, such that it decreases from the upper-right zone to the center..

Figure 4 illustrates this proposition regarding the location of uncertainty.

Figure 4. Hypothetical location of uncertain responses¹



In the literature on methodology, evaluation extremity reflects the intensity of a person's reactions, such that on linear scales the intensity of reactions increases as the person moves toward the extreme points of the continuum (Klopfer and Madden, 1980; Suchman, 1950). It also reflects the person's involvement as involved people usually display stronger and more polarized reactions (Brody et al., 1989; Jamieson and Spotts, 2015; Oliver and Bearden, 1983). Conversely, uninvolved people are less willing to take any strong position and more

¹ Figures 4 and 5 do not exhaustively reflect the uncertainty and involvement areas on the ESG, but focus on the upper-right zone of the ESG, where manifest ambivalence (our specific focus in this research) is likely to locate.

likely to search for a heuristic (Deighton, 1983), such as choosing an indifference zone. Studying linear rating scales, Dubois and Burns (1975) actually suggest that ambivalence could be distinguished from indifference if data on respondents' level of involvement were available. Hence, on average, involvement with the object under evaluation should increase along linear rating scales in the direction of its extreme points.

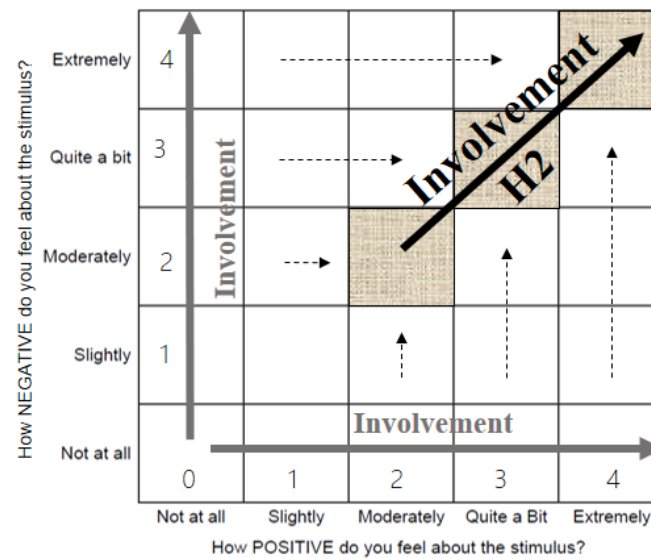
Reconsidering previous methodological equivalence between linear scales and the ESG, we contend that the indifference zone of the ESG (i.e., the bottom-left quadrant) should discard involved responses, while its other extremities should attract them. This should be especially the case of its upper-right zone, which corresponds to the crossing of the extreme points of two unipolar rating scales. This proposition is in line with the idea that involved people are more knowledgeable about the object under evaluation and therefore consider more attributes before formulating a global evaluation. As such, involvement increases the probability to be both more positive and more negative (Jewell et al., 2002), and to discard the bottom-left quadrant.

Following, the degree of involvement with the object under evaluation should increase from the central zone to the upper-right corner along the ESG secondary diagonal. This reasoning leads to formulate H2, which is consistent with the findings of the preliminary qualitative study:

H2. The level of involvement with the object under evaluation has an influence on the position of a response on the ESG secondary diagonal, such that it increases from the central point to the upper-right zone.

Figure 5 illustrates this proposition regarding the location of involvement.

Figure 5. Hypothetical localization of involved responses¹



Taken together, H1 and H2 suggest locating manifest ambivalence in the upper-right zone of the ESG. Though it is not the object of the present research, we note that anticipated ambivalence, which entails uncertainty, should spread in the central zone of the ESG and beyond if we consider that it can be made of positive and negative reactions that are not similar in intensity, and even of univalent reactions (Priester and Petty, 1996; Priester et al., 2007). We now conduct a quantitative study to test H1 and H2.

5. Quantitative survey

5.1. Methodology

To test H1 and H2, we administered a survey to 200 French consumers recruited through a professional market research institute. This sample varied respondents in terms of age ($M = 35.6$ years) and gender (50% female). The study took the form of a survey regarding satisfaction with one's last visit to the doctor. We chose the context of a physician evaluation

because at an overall level, the assessment of satisfaction with the last doctor's visit unpacks various pieces of information such as "the time spent with the physician", "the thoroughness of advice", and "the quality of waiting room" (Mittal and Baldasare, 1996). Such attributes might result in an ambivalent evaluation, providing a suitable experimental setting. Besides, patient satisfaction has recently become a vivid field in service research (e.g., Kasiri et al., 2017; Luther et al., 2016; Meesala and Paul, 2018; Mitropoulos et al., 2018).

After reading instructions about the format of the ESG, respondents were asked to indicate the length of their relationship with their doctor, which might affect their satisfaction (Cho et al., 2004), certainty and involvement (Gross et al., 1995; Wu and Shaffer, 1987). Respondents then rated their overall satisfaction with their doctor on three ESGs built with three different pairs of antonymous adjectives to characterize the two dimensions. We selected pairs of adjectives that are often used to measure satisfaction levels (Anderson and Srinivasan, 2003; Mittal et al., 1998): extremely negative opinions/extremely positive opinions (grid 1), extreme dissatisfaction/extreme satisfaction (grid 2), and extremely unfavorable opinions/extremely favorable opinions (grid 3). Each grid was accompanied by a measurement of certainty in the response given, which we evaluated with the following item, adapted from Petrocelli et al. (2007): "I am sure that the opinion I have expressed on my last consultation truly reflects my evaluation". At the end, respondents assessed their involvement with the object under evaluation using the five items tapping the object perceived importance dimension of the Zaichkowsky's (1985) involvement scale (i.e., "My relationship with my doctor does not matter", "...does not count for me", "...does not concern me", "... is negligible", and "... is useless". Analyses showed the unidimensionality of this five-item scale, and its reliability (Cronbach $\alpha = .95$). All constructs were measured using seven-point Likert scales, anchored by 1 = "strongly disagree" and 7 = "strongly agree."

6. Results

The responses located at the central point and above the central point along the secondary diagonal of each of the three ESGs, which particularly interests this research, represented between 54 and 59 respondents (out of 200) depending on the grid. We coded the central zone, the one with both x- and y-coordinates at 2 in the grid displayed in Figure 5, as 0. The answers with a (3,3) and (4,4) location on the diagonal of the above-mentioned grid were coded '+1' and '+2' respectively.

To test H1 and H2, which respectively postulate that the degree of uncertainty in the evaluation decreases, while the level of involvement with the object under evaluation increases from the central zone of the ESG to the upper-right zone, we regressed the zone on the diagonal by the degree of certainty in the evaluation and the level of involvement with the object under evaluation. As the three positions along the ESG diagonal (i.e., 0, '+1' and '+2') are ordered, we ran ordinal regressions using SPSS and controlling for respondents' gender and length of relationship with their doctor. Table II reports the results obtained for the three grids.

For the grid labeled extremely negative opinions/extremely positive opinions (grid 1), the ordinal regression was significant ($-2LL = 57.26$, $\chi^2 = 35.97$, $p < .01$; McFadden pseudo $R^2 = .36$). It shows that both the degree of certainty in the evaluation (Wald = 10.02, $p < .01$) and the level of involvement with the object under evaluation (Wald = 9.97, $p < .01$) increase respondents' probability to choose a response located higher on the upper-right diagonal of the ESG. These results corroborate both H1 and H2. To be noted, respondents' length of relationship with their doctor influences their answer, such that respondents displaying longer relationship with their doctor more often selected the upper-right zone of the ESG than its

central zone (Wald = 6.22, $p < .05$). The results of the analyses replicated on grids 2 and 3 were identical, as shown in Table II.

Table II. Results of the ordinal regression for the three grids

	DV 1: extremely negative opinions / extremely positive opinions (McFadden = .36***)	DV 2: extreme dissatisfaction / extreme satisfaction (McFadden = .21***)	DV 3: extremely unfavorable opinions / extremely favorable opinions (McFadden = .30***)
Certainty	10.02***	11.58***	7.93***
Involvement	9.97***	1.85*	6.92***
Gender	.75	.06	.52
Length of relationship	6.22***	.59	3.45**

Wald (p -value, *** $p < .01$, ** $p < .05$, * $p < .10$)

7. Discussion

7.1. Theoretical contributions

Based on a mixed design, both qualitative and quantitative, this research shows that responses located higher on the upper-right diagonal of the ESG are associated with higher certainty and higher involvement with the object under evaluation, thus tracking manifest ambivalence. These results extend previous research in several ways.

First, this research extends Larsen et al.'s (2009) seminal work on the potential of the ESG to disentangle responses that would usually be aggregated at the midpoint on linear rating scales (Kaplan, 1972; Thompson et al., 1995). Supporting Larsen et al. (2009)'s results, the qualitative exploration first located indifference in the bottom-left zone of the ESG. In this

zone, evaluations did not display manifest ambivalence, which corroborates Conner and Sparks' (2002) defining criteria, according to which ambivalence consists of positive and negative reactions of at least moderate intensity. Below, respondents are said to be indifferent (Thompson et al., 1995). Going further, in contrast with Larsen et al. (2009), the qualitative and quantitative studies do not restrict ambivalence to the central zone but extend it along the upper-right diagonal of the ESG, from the central zone to the upper-right zone. As such, it provides an empirical evidence for an idea that had already been suggested by Audrezet et al. (2016), though not empirically demonstrated. Of course, the results gained from this first exploration might be considered carefully as they are derived from a sample of experts and call for a replication on a more representative sample of potential users of the ESG. The fact that the ambivalent objects considered by Larsen et al. (2009) were actually selected by the respondents themselves may have lead them to select both manifest ambivalent and anticipated ambivalent objects, thus preventing the authors to correctly isolate the extent of the manifest ambivalence zone on the ESG. Regarding anticipated ambivalence, our verbal protocol was not able to locate it precisely, which may be due to the difficulty for respondents to verbalize things they are unaware of. However, uncertainty clearly appeared in the central zone of the ESG, suggesting that anticipated ambivalence could spread around, and beyond.

Second, considering apparently contradictory pieces of literature, it proposes a harmonious way of looking at ambivalence. More precisely, it posits the theoretical distinction made by Heuvinck (2012) according to which ambivalence is made of both manifest and anticipated ambivalence. This distinction echoes the contributions made by Priester and colleagues (1996, 2007), who consider that ambivalence can also be made of positive and negative reactions that are not similar in intensity, and even of univalent reactions, precisely describing what Heuvinck (2012) designated later by the explicit concept of "anticipated ambivalence". These theoretical developments do not contradict Conner and Sparks' (2002) ambivalence defining

criteria (i.e., positive and negative reactions of at least moderate and similar intensity), if we consider that Conner and Sparks' (2002) only addressed manifest ambivalence. As such, this research clarifies the literature on ambivalence, which could help researchers involved in its exploration.

Third, our research calls to a clearer distinction between anticipated and manifest ambivalence in further research. Ignoring it may potentially explain why Audrezet et al. (2016) failed to demonstrate that the ESG performs better than linear scales to measure satisfaction. Going further, we propose to broaden Heuvinck's (2012) view on anticipated ambivalence, i.e. situations where respondents anticipate that conflicting information could appear in the future. Following Sipilä et al.'s (2017a) idea that ambivalence could occur at successive consumption episodes, we contend that this distinction should not be limited to a prospective approach and that anticipated ambivalence could simply result from respondents' uncertainty about the positive and negative components of their evaluations at any stage of the temporal scope. The present research, which focuses on a post-consumption satisfaction measurement, actually suggests the presence of anticipated ambivalence in evaluations for which respondents were not likely to anticipate that conflicting information could appear in the future. Besides, we advocate that this distinction could be based, not only on respondents' certainty, but also on respondents' involvement with the object under evaluation. On the one hand, involved respondents may be more knowledgeable and therefore consider more attributes before formulating global evaluations. As such, they perceive more attributes and thus exhibit more intense positive and negative reactions to the evaluated object—that is, they express manifest ambivalence. On the other hand, moderately involved respondents may be uncertain or unaware of the existence of conflicting information, consider fewer attributes, and express anticipated ambivalence.

7.2 Managerial implications

From a managerial perspective, this research offers several implications. First, it provides practitioners with a tool to help them understand what lies behind the average performances they get from linear rating scales. The ESG is a relevant and practical way to capture manifest ambivalence and to isolate it from indifference or anticipated ambivalence, which would be very difficult using linear rating scales. This distinction is of utmost importance for practitioners piloting customer satisfaction. Precisely, indifferent customers do not care about the object under evaluation and are likely to switch from one option to another easily, while customers displaying anticipated ambivalence have an unclear evaluation that could change from one moment to the next. As such, indifference and anticipated ambivalence are both poor predictors of customer behavior (Heuvinck, 2012; Thornton, 2011; Yoo, 2010), and should not be considered as diagnostic. Manifest ambivalence, in contrast, might offer interesting levers for improvement, especially after further exploration at the attribute level. In this perspective, it is worth noting that in this research we focused on global evaluations because they are the evaluative standard to date. However, the ESG could be applied in the same way, and with the same relevance for interpretations and predictions, at an attribute level if marketers want to decompose their global offers into the sum of their different attributes. To sum-up, using the ESG instead of linear rating scales when surveying customer global satisfaction should allow making better interpretations and decisions. Further research could design new specific tools and compare them with the ESG in this perspective.

Second, using the ESG could also help marketers target specific marketing plans to each group of respondents. To begin, practitioners should try to attract the attention of indifferent customers by highlighting the differentiation of their services, and the value customers derive from this differentiation. To do so, they could offer the right kind of customization for the service experience, and communicate the value of it effectively so that customers would be

aware of those customization options. Beyond concrete attributes differentiation, they could also emphasize higher-order societal motivations or risks (e.g., preserve the planet, behave in a responsible way). Then, specific communication plans could address anticipated ambivalent respondents' uncertainty by repeating consistently simple allegations about important value-adding service attributes, in order to increase certainty in a relative way, and clarify respondents' evaluations. Displaying the positive evaluations made by other customers could also increase perceived transparency, prevent them from anticipating that there may exist conflicting information of which they are unaware, and help them gain certainty in their evaluations. Finally, practitioners should thoroughly explore the positive and negative elements justifying manifest ambivalent respondents' evaluations. As modifying certain and involved evaluations could be challenging, the negative elements should be practically addressed through long-term operational plans (e.g., employees training, modernization, innovation). The efforts made should then be piloted internally using non-debatable concrete indicators, and communicated externally using factual explanations. Still, these respondents also hold certain and positive evaluations, which represent another asset for persuasion. Insisting on these positive evaluations and providing additional information could dilute negative ones and resolve the ambivalence (Hodson et al, 2001; Maio et al., 1996; Sipilä et al., 2017b). Satisfying them is important as these customers are likely to be loyal to service providers or retailers (Olsen et al., 2009).

8. Limitations and future research

The ESG has been recently and successfully used in business research (e.g., Andrade and Cohen, 2007; Audrezet et al., 2016; Kerns, 2011; Kim et al., 2017; Kwak and Lee, 2016), but questions remain open to accelerate its appropriation by practitioners. We therefore call to

further research on the relevance of the ESG as a marketing tool. To begin, the differences in the magnitudes of coefficients and the significance of p-values shown in Table 2 could be explored further to identify the most efficient labels (i.e., “extremely negative opinions/extremely positive opinions”, “extreme dissatisfaction/extreme satisfaction”, “extremely unfavorable opinions/extremely favorable opinions”) from a conceptual and empirical point of view. Then, research could assess the reliability of simplified formats of the ESG, such as a 3×3 format, or employ verbal labels to clarify the meaning of each cell in the grid. Research could also test the relevance of using the ESG as a heat map in order to measure customers’ evaluations as continuous variables and apply more robust and common econometric analyses. Research could finally also test the ESG using different settings to increase its external validity.

Acknowledgements

The authors wish to thank the participants of the “Atelier Manger Penser” of the Institut Supérieur de Gestion of Paris for their valuable comments and suggestions. The authors also wish to acknowledge the support of the AFNOR Chair “Performance des Organisations” of the Fondation of Paris-Dauphine, which funded the data collection.

Appendix A. Profile of the interviewed experts

Name	Gender	Age	Occupation
Nathalie	Female	34	Researcher in marketing
Elodie	Female	34	Researcher in management
Lucie	Female	32	Researcher in marketing
Paul	Male	37	Researcher in marketing
Nabih	Male	35	Researcher in human resources
Louisa	Female	26	Researcher in sociology
Najate	Female	35	Researcher in human resources
Leila	Female	38	Researcher in marketing
Charlotte	Female	32	Researcher in marketing
Marc	Male	29	Researcher in management
Rachel	Female	25	Researcher in marketing
Anna	Female	24	Researcher in management

Appendix B. Interview guide

Introduction

During this interview, you are going to use an original measurement tool to answer questions about your level of satisfaction or dissatisfaction with some specific services.

I want to understand how you react when using this tool, what is the mental process resulting in your rating. To capture this mental process, I would like you to “think out loud”.

Is it clear for you? Can we begin?

Tool presentation

Would you please have a look on this measurement tool? Can you tell me how you understand it? *(the interviewer presents a blank grid to the interviewee)*

Thank you for this explanation.

To make things more concrete, could you try to use it to evaluate your last train journey with the SNCF (France's national state-owned railway company)?

Evaluation tasks

Now, could you please think out loud while rating your home insurance with this tool? *(the interviewer presents a new blank grid to the interviewee)*

More precisely, I would like to know:

- On which part of the tool are you focusing first while rating?
- Can you detail all the steps of your mental process from the moment you receive my question to the moment you select one cell of the tool?

All right. Now, could you please think out loud while rating the university restaurant with this tool? *(the interviewer presents a new blank grid to the interviewee)*

More precisely, I would like to know:

- On which part of the tool are you focusing first while rating?
- Can you detail all the steps of your mental process from the moment you receive my question to the moment you select one cell of the tool?

Conclusion

To conclude the interview, can you give me your opinion on this tool? Is it interesting? In which situations? Is it respondent-friendly?

References

- Alberini, A., Boyle, K., Welsh, M., 2003. Analysis of contingent valuation data with multiple bids and response options allowing respondents to express uncertainty. *Journal of Environmental Economics and Management*. 45 (1), 40–62.
- Anderson, R.E., Srinivasan, S.S., 2003. E-satisfaction and e-loyalty: a contingency framework. *Psychology & Marketing*. 20 (2), 123–138.
- Andrade, E.B., Cohen, J.B., 2007. On the consumption of negative feelings. *Journal of Consumer Research*. 34 (3), 283–300.
- Antil, J.H., 1983. Uses of response certainty in attitude measurement. *Advances in Consumer Research*. 10 (1), 409–415.
- Armitage, C.J., Conner, M., 2000. Attitudinal ambivalence: a test of three key hypotheses. *Personality and Social Psychology Bulletin*. 26 (11), 1421–1432.
- Audrezet, A., Olsen, S.O., Tudoran, A.A., 2016. The GRID scale: a new tool for measuring service mixed satisfaction. *Journal of Services Marketing*. 30 (1), 29–47.
- Baka, A., Figgou, L., Triga, V., 2012. 'Neither agree, nor disagree': a critical analysis of the middle answer category in voting advice applications. *International Journal of Electronic Governance*. 5 (3-4), 244–263.
- Bassili, J.N., 1996. Meta-judgmental versus operative indexes of psychological attributes: the case of measures of attitude strength. *Journal of Personality and Social Psychology*. 71 (4), 637–653.
- Bishop, G.F., Oldendick, R.W., Tuchfarber, A.J., 1983. Effects of filter questions in public opinion surveys. *Public Opinion Quarterly*. 47 (4), 528–546.
- Bizer, G.Y., Tormala, Z.L., Rucker, D.D., Petty, R.E., 2006. Memory-based versus on-line processing: implications for attitude strength. *Journal of Experimental Social Psychology*. 42 (5), 646–653.
- Bolton, R.N., 1993. Pretesting questionnaires: content analyses of respondents' concurrent verbal protocols. *Marketing science*, 12 (3), 280–303.
- Breckler, S.J., 1994. A comparison of numerical indices for measuring attitude ambivalence. *Educational and Psychological Measurement*. 54 (2), 350–365.
- Brody, D.S., Miller, S.M., Lerman, C.E., Smith, D.G., Caputo, G.C., 1989. Patient perception of involvement in medical care. *Journal of General Internal Medicine*. 4 (6), 506–511.
- Cacioppo, J.T., Berntson, G.G., Norris, C.J., Gollan, J.K., 2011. *The Evaluative Space Model*. Sage Press, Thousand Oaks, CA.
- Cacioppo, J.T., Gardner, W.L., Berntson, G.G., 1997. Beyond bipolar conceptualizations and measures: the case of attitudes and evaluative space. *Personality and Social Psychology Review*. 1 (1), 3–25.
- Cacioppo, J.T., Norris, C.J., Decety, J., Monteleone, G. and Nusbaum, H., 2009. In the eye of the beholder: individual differences in perceived social isolation predict regional brain activation to social stimuli. *Journal of Cognitive Neuroscience*. 21 (1), 83–92.
- Chen, S.C., 2012. The customer satisfaction–loyalty relation in an interactive e-service setting: the mediators. *Journal of Retailing and Consumer Services*. 19 (March), 202–210.

- Cho, W.H., Lee, H., Kim, C., Lee, S., Choi, K.S., 2004. The impact of visit frequency on the relationship between service quality and outpatient satisfaction: a South Korean study. *Health Services Research*. 39 (1), 13–34.
- Clarkson, J.J., Tormala, Z.L., Rucker, D.D., 2008. A new look at the consequences of attitude certainty: the amplification hypothesis. *Journal of Personality and Social Psychology*. 95 (4), 810–825.
- Conner, M., Sparks, P., 2002. Ambivalence and attitudes. *European Review of Social Psychology*. 12 (1), 37–70.
- Conner, M., Sparks, P., Povey, R., James, R., Shepherd, R., Armitage, C.J., 2002. Moderator effects of attitudinal ambivalence on attitude–behaviour relationships. *European Journal of Social Psychology*. 32 (5), 705–718.
- Converse, P.E., 1970. Attitudes and Non-attitudes: Continuation of a Dialogue. *The Quantitative Analysis of Social Problems*, Edward R. Tufte, ed. Reading, MA: Addison-Wesley.
- Coombs, C.H., Coombs, L.C., 1976. “Don't know” item ambiguity or respondent uncertainty? *Public Opinion Quarterly*. 40 (4), 497–514.
- Deighton, J., 1983. How to solve problems that don't matter: some heuristics for uninvolved thinking. *Advances in Consumer Research*. 10, 314–319.
- Denzin, N.K., Lincoln, Y.S., 2005. *The Sage Handbook of Qualitative Research*. Sage Publications, Thousand Oaks.
- DeRouvray, C., Couper, M.P., 2002. Designing a strategy for reducing “no opinion” responses in web-based surveys. *Social Science Computer Review*. 20 (1), 3–9.
- Dubois, B., Burns, J.A., 1975. An analysis of the meaning of the question mark response category in attitude scales. *Journal of Educational and Psychological Measurement*. 35, 869–884.
- Engler, T.H., Winter, P., Schulz, M., 2015. Understanding online product ratings: a customer satisfaction model. *Journal of Retailing and Consumer Services*. 27 (November), 113–120.
- Ericsson, K.A. and Simon, H.A., 1993. *Protocol analysis: Verbal reports as data* (rev. ed.). MIT Press. Cambridge, MA.
- Evanschitzky, H., Wunderlich, M., 2006. An examination of moderator effects in the four-stage loyalty model. *Journal of Service Research*. 8 (4), 330–345.
- Fazio, R.H., 1987. Self-perception theory: a current perspective, in: Zanna, M.P., Olson, J.M., Herman, C.P. (Eds.), *Proceeding of The Ontario Symposium on Social Influence*. Lawrence Erlbaum Associates, Inc., Hillsdale, NJ, pp. 129–150.
- Fazio, R.H., 2007. Attitudes as object–evaluation associations of varying strength. *Social Cognition*. 25 (5), 603–637.
- Fazio, R.H., Zanna, M.P., 1978. Attitudinal qualities relating to the strength of the attitude-behavior relationship. *Journal of Experimental Social Psychology*. 14 (4), 398–408.
- Fonseca, J.R., 2009. Customer satisfaction study via a latent segment model. *Journal of Retailing and Consumer Services*. 16 (September), 352–359.
- Garland, R., 1991. The mid-point on a rating scale: Is it desirable. *Marketing Bulletin*. 2 (1), 66–70.

- Gross, S.R., Holtz, R., Miller, N., 1995. Attitude certainty, in: Petty, R.E., Krosnick, J.A. (Eds.), *Attitude Strength: Antecedents and Consequences*. Lawrence Erlbaum Association, Mahwah, NJ, pp. 215–246.
- Hanemann, W.M., 1984. Welfare evaluations in contingent valuation experiments with discrete responses. *American Journal of Agricultural Economics*. 66 (3), 332–341.
- Hawkins, D.I., Coney, K.A., 1981. Uninformed response error in survey research. *Journal of Marketing Research*. 18 (August), 370–374.
- Hawkins, D.I., Coney, K.A., Jackson Jr, D.W., 1988. The impact of monetary inducement on uninformed response error. *Journal of the Academy of Marketing Science*. 16 (2), 30–35.
- Helson, R., Wink, P., 1992. Personality change in women from the early 40s to the early 50s. *Psychology and Aging*. 7 (1), 46.
- Heuvinck, N., 2012. *Underneath the Skin of Attitude Ambivalence: Different Types of Ambivalence*. Doctoral dissertation, University of Gent.
- Hodson, G., Maio, G.R., Esses, V.M. 2001. The role of attitudinal ambivalence in susceptibility to consensus information. *Basic and Applied Social Psychology*. 23 (3), 197–205.
- Hunter, P.G., Schellenberg, E.G., Schimmack, U., 2008. Mixed affective responses to music with conflicting cues. *Cognition & Emotion*. 22 (2), 327–352.
- Jamieson, L.F., Spotts, H., 2015. A comparison of extreme response style and bias between elderly and nonelderly respondents, in *Proceedings of the 1991 Academy of Marketing Science Annual Conference*. Springer, pp. 366–370.
- Jewell, R.D., Coupey, E., Jones, M.T., 2002. Catch a tiger by his toe: Ambivalence in decision making in the 2000 presidential election. *Advances in Consumer Research*. 29, 333–338.
- Kaplan, K.J., 1972. On the ambivalence-indifference problem in attitude theory and measurement: a suggested modification of the semantic differential technique. *Psychological Bulletin*. 77 (5), 361–372.
- Kasiri, L.A., Cheng, K.T.G., Sambasivan, M., Sidin, S.M., 2017. Integration of standardization and customization: impact on service quality, customer satisfaction, and loyalty. *Journal of Retailing and Consumer Services*. 35 (March), 91–97.
- Katz, D., 1944. The Measurement of Intensity, in: Cantril, H. (Ed.), *Gauging Public Opinion*. Princeton University Press, Princeton, NJ, pp. 51–65
- Kerns, C.D., 2011. Promoting and managing positivity: a coaching approach. *Business Renaissance Quarterly*. 6 (3), 25–49.
- Kim, J.W., Magnusen, M., Lee, H.-W., 2017. Existence of mixed emotions during consumption of a sporting event: a real-time measure approach. *Journal of Sport Management*. 31 (4), 1–40.
- Klopper, F.J., Madden, T.M., 1980. The middlemost choice on attitude items: ambivalence, neutrality, or uncertainty? *Personality and Social Psychology Bulletin*. 6 (1), 97–101.
- Krosnick, J.A., Petty, R.E., 1995. Attitude Strength: an Overview, in: Petty, R.E., Krosnick, J.A. (Eds.), *Attitude Strength: Antecedents and Consequences*. Lawrence Erlbaum Association, Mahwah, NJ, pp. 1–24.

- Kwak, H.S., Ahn, B.H., Lee, Y., Kreger, J., Lee, S.Y., 2013. Correlation of liking and disliking measurements in consumer acceptance tests. *Food Quality and Preference*. 30 (2), 86–92.
- Kwak, H.S., Lee, S.-Y., 2016. Presentation methods for unidirectional scales to measure consumers' liking and disliking percepts. *Food Quality and Preference*. 51, 20–26.
- Larsen, J.T., McGraw, A.P., 2011. Further evidence for mixed emotions. *Journal of Personality and Social Psychology*. 100 (6), 1095–1110.
- Larsen, J.T., McGraw, A.P., Cacioppo, J.T., 2001. Can people feel happy and sad at the same time? *Journal of Personality and Social Psychology*. 81 (4), 684–696.
- Larsen, J.T., Norris, C.J., McGraw, A.P., Hawkley, L.C., Cacioppo, J.T., 2009. The Evaluative Space Grid: a single-item measure of positivity and negativity. *Cognition & Emotion*. 23 (3), 453–480.
- Lavine, H., Borgida, E., Sullivan, J.L., 2000. On the relationship between attitude involvement and attitude accessibility: toward a cognitive-motivational model of political information processing. *Political Psychology*. 21 (1), 81–106.
- Li, C.-Z., Mattsson, L., 1995. Discrete choice under preference uncertainty: an improved structural model for contingent valuation. *Journal of Environmental Economics and Management*. 28 (2), 256–269.
- Lundhede, T.H., Olsen, S.B., Jacobsen, J.B., Thorsen, B.J., 2009. Handling respondent uncertainty in choice experiments: evaluating recoding approaches against explicit modelling of uncertainty. *Journal of Choice Modelling*. 2 (2), 118–147.
- Lusch, R.F., Vargo, S.L., 2012. *Service-Dominant Logic*. University Press, Cambridge.
- Luther, L., Benkenstein, M., Rummelhagen, K., 2016. Enhancing patients' hospital satisfaction by taking advantage of interpersonal similarity. *Journal of Retailing and Consumer Services*, 30 (May), 50–58.
- Maio, G.R., Bell, D.W., Esses, V.M., 1996. Ambivalence and persuasion: the processing of messages about immigrant groups. *Journal of Experimental Social Psychology*. 32 (6), 513–536.
- Mattson, R.E., Paldino, D., Johnson, M.D., 2007. The increased construct validity and clinical utility of assessing relationship quality using separate positive and negative dimensions. *Psychological Assessment*. 19 (1), 146–151.
- Meesala, A., Paul, J., 2018. Service quality, consumer satisfaction and loyalty in hospitals: Thinking for the future. *Journal of Retailing and Consumer Services*, 40 (1), 261–269.
- Mehling, R., 1959. A simple test for measuring intensity of attitudes. *Public Opinion Quarterly*. 23 (4), 576–578.
- Mitropoulos, P., Vasileiou, K., Mitropoulos, I., 2018. Understanding quality and satisfaction in public hospital services: a nationwide inpatient survey in Greece. *Journal of Retailing and Consumer Services*, 40 (1), 270–275.
- Mittal, V., Baldasare, P.M., 1996. Eliminate the negative: managers should optimize rather than maximize performance to enhance patient satisfaction. *Journal of Health Care Marketing*. 16 (3), 24–31.

- Mittal, V., Ross, W.T.J., Baldasare, P.M., 1998. The asymmetric impact of negative and positive attribute-level performance on overall satisfaction and repurchase intentions. *Journal of Marketing*. 62 (1), 33–47.
- Nadler, J.T., Weston, R., Voyles, E.C., 2015. Stuck in the Middle: the use and interpretation of mid-points in items on questionnaires. *The Journal of General Psychology*. 142 (2), 71–89.
- Newby-Clark, I.R., McGregor, I., Zanna, M.P., 2002. Thinking and caring about cognitive inconsistency: When and for whom does attitudinal ambivalence feel uncomfortable? *Journal of personality and social psychology*. 82 (2), 157.
- Newell, A. and Simon, H.A., 1972. *Human problem solving*. Englewood Cliffs, NJ: Prentice-Hall.
- Norman, R., 1975. Affective-cognitive consistency, attitudes, conformity, and behavior. *Journal of Personality and Social Psychology*. 32 (1), 83–91.
- Nowlis, S.M., Kahn, B.E., Dhar, R., 2002. Coping with ambivalence: the effect of removing a neutral option on consumer attitude and preference judgments. *Journal of Consumer Research*. 29 (3), 319–334.
- Oliver, R.L., Bearden, W.O., 1983. The role of involvement in satisfaction processes. *Advances in Consumer Research*. 10 (1), 250–255.
- Olsen, S.O., 1999. Strength and conflicting valence in the measurement of food attitudes and preferences. *Food Quality and Preferences*. 10 (6), 483–494.
- Olsen, S.O., Prebensen, N., Larsen, T.A., 2009. Including ambivalence as a basis for benefit segmentation: a study of convenience food in Norway. *European Journal of Marketing*. 43 (5/6), 762–783.
- Payne, J.W., 1994. Thinking aloud: Insights into information processing. *Psychological Science*, 5 (5), 241–248.
- Pelham, B.W., 1991. On confidence and consequence: the certainty and importance of self-knowledge. *Journal of Personality and Social Psychology*. 60 (4), 518–530.
- Petrocelli, J.V., Tormala, Z.L., Rucker, D.D., 2007. Unpacking attitude certainty: attitude clarity and attitude correctness. *Journal of Personality and Social Psychology*. 92 (1), 30–41.
- Presser, S., Schuman, H., 1980. The measurement of a middle position in attitude surveys. *Public Opinion Quarterly*. 44 (1), 70–85.
- Priester, J.R., Petty, R.E., 1996. The gradual threshold model of ambivalence: relating the positive and negative bases of attitudes to subjective ambivalence. *Journal of Personality and Social Psychology*. 71 (3), 431–449.
- Priester, J.R., Petty, R.E., Park, K., 2007. Whence univalent ambivalence? From the anticipation of conflicting reactions. *Journal of Consumer Research*. 34, (1), 11–21.
- Regier, D.A., Watson, V., Burnett, H., Ungar, W.J., 2014. Task complexity and response certainty in discrete choice experiments: an application to drug treatments for juvenile idiopathic arthritis. *Journal of Behavioral and Experimental Economics*. 50 (June), 40–49.
- Roese, N. J., Olson, J. M., 1994. Attitude importance as a function of repeated attitude expression. *Journal of Experimental Social Psychology*. 30 (1), 39–51.
- Ruiz Diaz, G., 2017. The influence of satisfaction on customer retention in mobile phone market. *Journal of Retailing and Consumer Services*. 36 (May), 75–85.

- Sample, J., Warland, R., 1973. Attitudes and the prediction of behaviour. *Social Forces*. 51 (March), 292–304.
- Schuman, H., Presser, S., 1996. *Questions and Answers in Attitude Surveys: Experiments on Question Form, Wording, and Context*. Sage, Thousand Oaks, London.
- Sipilä, J., Herold, K., Tarkiainen, A., Sundqvist, S., 2017b. The influence of word-of-mouth on attitudinal ambivalence during the higher education decision-making process. *Journal of Business Research*, 80 (November), 176–187.
- Sipilä, J., Tarkiainen, A., Sundqvist, S., 2017a. Toward an improved conceptual understanding of consumer ambivalence. *AMS Review*, 1–16.
- Suchman, E.A., 1950. The intensity component in attitude and opinion research. *Measurement and Prediction*. 4, 213–276.
- Thompson, M.M., Zanna, M.P., Griffin, D.W., 1995. Let's not be indifferent about (attitudinal) ambivalence, in: Petty, R.E., Krosnick, J.A. (Eds.), *Attitude Strength: Antecedents and Consequences*. Lawrence Erlbaum Association, Mahwah, NJ, pp. 361–386.
- Thornton, J.R., 2011. Ambivalent or indifferent? Examining the validity of an objective measure of partisan ambivalence. *Political Psychology*. 32 (5), 863–884.
- Tormala, Z.L., Rucker, D.D., 2007. Attitude certainty: a review of past findings and emerging perspectives. *Social and Personality Psychology Compass*. 1 (1), 469–492.
- Turner, P.K., Krizek, R.L., 2006. A meaning-centered approach to customer satisfaction. *Management Communication Quarterly*. 20 (2), 115–147.
- Tuten, T.L., August, R.A., 1998. Understanding consumer satisfaction in services settings: a bidimensional model of service strategies. *Journal of Social Behavior and Personality*. 13 (3), 553–564.
- van Reekum, C.M., Schaefer, S.M., Lapate, R.C., Norris, C.J., Greischar, L.L. and Davidson, R.J., 2011. Aging is associated with positive responding to neutral information but reduced recovery from negative information. *Social Cognitive and Affective Neuroscience*. 6 (2) 177–185.
- Visser, P.S., Mirabile, R.R., 2004. Attitudes in the social context: the impact of social network composition on individual-level attitude strength. *Journal of Personality and Social Psychology*. 87 (6), 779–795.
- Worcester, R.M., Burns, T.R., 1975. Statistical examination of relative precision of verbal scales. *Journal of the Market Research Society*. 17 (3), 181–197.
- Wu, C., Shaffer, D.R., 1987. Susceptibility to persuasive appeals as a function of source credibility and prior experience with the attitude object. *Journal of Personality and Social Psychology*. 52 (4), 677–688.
- Yan, T., Tourangeau, R., 2008. Fast times and easy questions: the effects of age, experience and question complexity on web survey response times. *Applied Cognitive Psychology*. 22 (1), 51–68.
- Yoo, S.-J., 2010. Two types of neutrality: ambivalence versus indifference and political participation. *The Journal of Politics*. 72 (1), 163–177.
- Zaichkowsky, J.L., 1985. Measuring the involvement construct. *Journal of Consumer Research*. 12 (3), 341–352.