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Are Emotions Essential for Consumer Ethical Decision Making: A Necessary Condition Analysis.

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Abstract

This research examines the necessary condition of emotions in predicting consumer ethical decision making, using a new multiplicative method for identifying and measuring the necessary condition in datasets – Necessary Condition Analysis (NCA). Based on a sample of over four hundred individuals, and combining three different consumption scenarios involving ethical issues, our findings demonstrate that emotions are a necessary condition for consumer ethical decisions and behaviours. In addition, the results show that higher levels of consumer ethical decisions can only be achieved if happiness, gladness and satisfaction increase towards a minimum level of necessity. The findings provide empirical support for the essential role of emotions in predicting consumer ethical decision making. Furthermore, this research identifies the emotional thresholds without

which ethical choices cannot occur, then explains why individuals sometimes behave ethically but other times do not. In addition, this is a first contribution applying NCA to consumer ethics.

Keywords: Consumer Ethics; Emotions; Ethical Decision Making; Happiness;
Necessary Condition Analysis

1. Introduction

Consumer ethics is an important economic, social and environmental issue around the globe (Chowdhury, 2019). Indeed, consumers often make choices with ethical implications, for example purchasing recycled products to reduce plastic waste in the ocean (Barbarossa & De Pelsmacker, 2016). In contrast, consumers may also engage in unethical behaviours such as shoplifting (Aloysius et al., 2019), fare evasion (Delbosc & Currie, 2019), consumption of counterfeits (Chen et al., 2018), and digital piracy (Kos Koklic et al., 2016). The potential impact of such (un)ethical behaviours highlights the need for consumer behaviour scholars to further understand consumer ethics, and to provide guidelines for marketing practitioners on how to encourage ethical decisions and reduce unethical choices.

In recent years, substantial conceptual and theoretical advances have been made in our understanding of consumer ethics (see Hassan et al., 2022 for a recent review). Notably, a key issue has been identifying the antecedents of consumer ethical decision making. In this regard, scholars have examined the role of psychographic variables, including religiosity (Arli et al., 2021), materialism (Lu & Lu, 2010), and moral identity (Chowdhury & Fernando, 2014), in addition to demographic variables such as gender (Tjiptono et al., 2017) and education level (Lu & Lu, 2010).

Missing from the list of variables described above are affective factors, which have not been extensively investigated as antecedents of consumer ethical decision making (Septianto et al., 2020; Singh et al., 2018; Vitell et al., 2013). Indeed, as Septianto et al. (2020: 1) point out, most previous studies in this area have “focused on the cognitive as opposed to emotional aspects”. The examination of emotions in consumer ethics represents an important research topic because, despite an initial focus on a rationalist-based view, in which ethical decision making was seen as primarily a cognitive, deliberate

and rational process (Ajzen, 1991; Kohlberg, 1969), subsequent advances recognise the emotional component as a central element of ethical choices and actions (Greene et al., 2001; Haidt, 2001). One which remains, however, comparatively understudied. Yet the sentimentalist tradition posits that emotion is a source of pivotal information that supports ethical decisions (Ruedy et al., 2013), influences perceptions of risk (Henik, 2008), and acts as a conduct regulator (Greene et al., 2001) by activating specific socio-moral concerns (Horberg et al., 2011).

Recent research exploring emotion in consumer ethics has demonstrated that emotions, both positive and negative, can exert a significant role in predicting consumer ethical decision making (Escadas et al., 2019a), including by facilitating consumer recognition of an ethical issue (Yacout & Vitell, 2018) and mitigating ethical double standards (Septianto et al., 2020). However, these previous explorations of the relationship between emotions and consumer ethics focus on the traditional sufficient logic paradigm and average trends (Hassan et al., 2022), presuming that causality is additive.

Building on these findings suggesting an influential role of emotions on consumer ethics, two important questions require further examination: *i*) Which emotion(s) is a necessary condition for consumer ethical decision making? And *ii*) What are the emotional thresholds required for ethical decision making? The present research aims to answer these questions: first, by examining the necessary relationship between different emotions and consumer ethical decision making by applying a multiplicative model of causality – the Necessary Condition Analysis (Dul, 2016a); and second, by specifying the necessary level of the conditions – emotions – required for high-level consumer ethical choices and behaviours.

Necessary Condition Analysis (NCA) (Dul, 2016a) is a new and simple statistical technique that allows the determinants with the greatest impact on a desired outcome to be estimated (Dul et al., 2018). Further, NCA provides the threshold levels of necessity required for different levels of the outcome, contributing in this research to a detailed prediction of how high-level consumer ethical decisions are made and how they can be encouraged.

As such, this research contributes to increasing scientific knowledge on consumer ethics and their emotional component. Specifically, the research provides a better understanding of the emotional predictors of consumer ethics, as well as the nature and intensity of this relationship. Furthermore, to the best of our knowledge, this research is the first to apply NCA to the consumer ethics literature. From a practical point of view, the findings provide a thorough understanding of what drives consumer ethical decision making and the necessary level of emotions, without which the desired ethical decisions cannot occur. This knowledge will provide guidance to public and private practitioners on developing more effective and successful marketing actions, benefiting not only organisations and institutions, but also society as a whole. Moreover, by identifying the necessary emotional levels for higher ethical consumption decisions, this research helps explain both how ethical consumer decisions are formed and how they can be encouraged, providing key insights for promoting socially, environmentally and economically responsible behaviours.

The remainder of the paper is structured as follows. The next section presents the conceptual background of the study through a description of the relevant literature, as well as the research hypotheses developed therefrom. Section three then presents the methods used and section four presents the results. Finally, the main findings are discussed and implications and conclusions drawn.

2. Literature Review

2.1. Consumer Ethical Decision Making Process

Consumer ethics are defined as “the moral principles and standards that guide the behaviour of individuals and groups as they obtain, use and dispose of goods and services” (Muncy & Vitell, 1992: 292). Consumer ethical decision making, in turn, refers to the process by which consumers determine whether a certain consumption issue, situation or decision is right or wrong based on their moral background (Carlson et al., 2009). Notably, ethical decision making comprises a series of temporal and sequential stages that apply to consumer deliberations in ethical situations (Schwartz, 2016). The four-component model of moral deliberation proposed by Rest (1986) is one of the most used and tested frameworks for ethical decision making. This rationalist-based model suggests that the process comprises four main sequential steps, beginning with recognition of the moral nature of an issue – *moral awareness*; which leads to judgments about what is right or wrong – *moral judgments*. Then, moral concerns may be prioritised above other personal concerns, such that the *moral intention* to act according to what is morally right is established. And finally, this intention may translate into overcoming obstacles and engaging in moral action in the form of *moral behaviour*.

Much consumer ethics research has been carried out explicitly or implicitly applying Rest’s (1986) model (see Craft, 2013; Lehnert et al., 2015; Schwartz, 2016). However, the emergence of significant research examining the consumer ethical decision making process highlights there is much left to understand in terms of an integrated deliberation process where ethical concerns are involved (Robertson et al., 2017; Zollo et al., 2017).

2.2. Emotions and Consumer Ethical Decision Making

A long-standing strand of ethics research emphasises the rational and socio-cognitive antecedents of decision making, drawing on theoretical models that include a set of individual and situational variables to explain ethical decision making (Ferrell & Gresham, 1985; Hunt & Vitell, 1986; Jones, 1991; Kohlberg, 1973; Trevino, 1986). This is consistent with a large body of literature in consumer ethics that has investigated the role of psychographic (Arli et al., 2021; Chowdhury & Fernando, 2014; Lu & Lu, 2010) and demographic variables (Lu & Lu, 2010; Tjiptono et al., 2017). For instance, Arli et al. (2021) report that higher levels of extrinsic religiosity – a religious bond driven by personal benefit – are associated with a higher acceptance of unethical consumer behaviours.

Despite the unquestionable relevance and validity of these approaches, more recent contributions point to the inability of such perspectives to fully account for ethical decision making (Schwartz, 2016). This is because individuals are not purely rational, and so are not always able to consciously include ethical concerns in their judgments and behaviours (Chatzidakis et al., 2018). As such, the social-intuitionist tradition suggests that emotions also influence ethical decision making (Greene et al., 2001; Haidt, 2001; Zollo et al., 2017). Notably, although both reason and emotion are likely to play critical roles in decision making involving ethical content (Young & Koenigs, 2007), the *Somatic Marker Hypothesis* (Damasio, 1994) further suggests that emotion leads reasoning processes, and regular decision making is more emotional and less reasoned than initially believed.

Indeed, cumulative contributions from neuroscience and medical research support the assertion that ethical decision making is not based only on reasoning processes, but also on automatic, intuitive and emotion-based mechanisms (Haidt, 2001; Salvador &

Folger, 2009). Neurobiological research shows that the brain areas associated with emotion are activated to a much higher degree when individuals face morally relevant content – *moral awareness* (Moll et al., 2002); make moral choices – *moral judgment* (Koenigs et al., 2007); formulate behavioural intentions in response to morally relevant scenarios – *moral intention* (Borg et al., 2006); and act in a socially appropriate way – *moral behaviour* (King et al., 2006). These and other findings suggest that emotion and ethical decision making share common neural mechanisms (Greene & Haidt, 2002).

This perspective has given rise to a growing literature examining the role of emotions in consumer ethics (Septianto et al., 2020; also see Hassan et al., 2022 for a recent systematic review). Notably, such studies have demonstrated that emotions experienced by consumers that are unrelated to the decision at hand (also called incidental emotions; Achar et al., 2016) can have a significant influence on subsequent ethical decision making. For example, Septianto et al. (2020) found that recalling an anger-eliciting experience can diminish double standards in subsequent consumer ethical judgments. In a similar vein, Yacout and Vitell (2018) show that fear can predict consumer intentions to engage in ethical decisions, while Singh et al. (2018) identify the distinct influence of fear and anger on acceptance of questionable consumer behaviour. Finally, research by Escadas et al. (2020) extends the relationship between emotions and consumer ethical decisions, uncovering a “virtuous ethical cycle” between positive emotions, consumer ethical behaviours, positive post-decision emotions and future ethical behavioural intentions.

Some key empirical studies examining the influence of discrete emotions on consumer ethical decision making published since 2010 are outlined in Table 1. While these studies highlight a significant relationship between emotions and consumer ethical

decision making, relatively little is known about which emotions are a *necessary condition* for consumer ethical decisions.

INSERT TABLE 1 ABOUT HERE

2.3. Hypotheses Development

Emotions are multidimensional feelings, typically connected to physiological or physical processes, that arise from the individual's relationship to their social and physical environment and which influence specific actions based on the contextual and personal characteristics of the individual (Bagozzi et al., 1999; Lambie & Marcel, 2002; Smith & Ellsworth, 1985). Across the wide range of emotional states described in the literature, there is agreement that feelings such as happiness, joy, contentment, pleasure, satisfaction, enthusiasm, excitement and delight can be considered among the most relevant positive emotions; while sadness, fear, guilt, anger, shame, worry, frustration and embarrassment feature as some of the most important negative emotions (Bagozzi et al., 1998; Bagozzi et al., 2016; Laros & Steenkamp, 2005; Lazarus, 1991; Shaver et al., 1987; Watson & Tellegen, 1985). Moreover, these emotions, both positive and negative, are particularly important in influencing individuals' ethical choices and actions (Eisenberg, 2000; Haidt, 2003; Tangney et al., 2007).

In the recent marketing literature, happiness, gladness, satisfaction and excitement have attracted growing interest among researchers in relation to consumption decisions, with findings suggesting these positive emotions influence consumer interaction and engagement (Casaló et al., 2021), increase repurchase intentions (Septianto et al., 2019), and enhance consumer loyalty (Núñez-Barriopedro et al., 2021). Similarly, sadness, guilt, discomfort and shame – as negative emotions – have been found to influence charitable donations (Homer, 2021), consumer product preferences (Motoki & Sugiura, 2018), and

to foster healthy (Herter et al., 2021) and prosocial behaviours (Septianto & Paramita, 2021). It is thus to be expected that these discrete emotions may be able to explain and predict consumer ethical decisions and behaviours. The current research builds upon previous findings to explore the impact of four positive (happiness, gladness, satisfaction and excitement) and four negative (sadness, guilt, discomfort and shame) discrete emotions on consumer decision making involving ethics.

Happiness is a positive emotion that involves a relatively high heart rate and systolic blood pressure (Schwartz et al., 1981). Happiness is initiated through the positive outcome of obtaining something desirable (Shaver et al., 1987): personal gain in the context of overall sense of security (Lazarus & Smith, 1988), or relational and affective gain in the social domain (Shaver et al., 1987). The happy person is described as energetic, active and bouncy, as expressed by laughing, smiling and talking enthusiastically (Shaver et al., 1987). Happiness, gladness, satisfaction and excitement share similar cognitive appraisals (Roseman, 1991).

Sadness is a negative emotion described as the extremely unpleasant feeling that arises when an undesirable experience occurs over which the subject has limited or no control, nor the ability to undo (Smith & Ellsworth, 1985). The thoughts of sad individuals tend to be pessimistic, characterised by negativity and only seeing the dark side of events (Shaver et al., 1987). Shame and guilt share common cognitive appraisals (Smith & Ellsworth, 1985) and are characterised by a sense of self-blame arising from past situations in which individuals did something which they later regretted (Smith & Ellsworth, 1985). These emotional states can be characterized as transitory affective states, but also as enduring personality traits that increase readiness to experience negative based on the personal moral values (Kugler & Jones, 1992). The emotion of discomfort is an instance of fear, an unpleasant state that begins with an intrinsic appraisal of events

as potentially dangerous to the self (Shaver et al., 1987), leading people to feel nervous, jittery, jumpy (Shaver et al., 1987), and in turn to make pessimistic and risk-averse judgments and choices (Lerner & Keltner, 2001). Sadness, shame, guilt and discomfort can be described as *negative affectivity* that may influence one's social and moral behaviours (Kugler & Jones, 1992).

In sum, the positive emotions of happiness, gladness, satisfaction and excitement, and the negative emotions of sadness, shame, guilt and discomfort are some of the most relevant emotions in moral behaviour (Wagner et al., 2011). On this basis, and following Rest's (1986) four-stage model of moral deliberation, we propose that:

H1: Happiness (a), gladness (b), satisfaction (c), excitement (d), sadness (e), guilt (f), discomfort (g), and shame (h) are necessary conditions for consumer ethical awareness;

H2: Happiness (a), gladness (b), satisfaction (c), excitement (d), sadness (e), guilt (f), discomfort (g), and shame (h) are necessary conditions for consumer ethical judgment;

H3: Happiness (a), gladness (b), satisfaction (c), excitement (d), sadness (e), guilt (f), discomfort (g), and shame (h) are necessary conditions for consumer ethical intention;

H4: Happiness (a), gladness (b), satisfaction (c), excitement (d), sadness (e), guilt (f), discomfort (g), and shame (h) are necessary conditions for consumer ethical behaviour.

2.4. Testing Necessary Condition Relationships

Since Francis Galton introduced the concept of correlation in 1886 (Galton, 1886, 1888), and Karl Pearson then clarified many of Galton's ideas (Pearson, 1894, 1920), subsequent research has mostly focused on the sufficient logic paradigm and average trends, aiming to predict an outcome from a single or multiple determinants by testing the

general proposition that “if X, then Y, on average” (Karwowski et al., 2016). However, in real life, the necessary but not sufficient logic generally prevails. For instance, water is necessary but not sufficient to life. The necessary condition implies the presence of a particular determinant for an outcome to exist, but it does not automatically produce that outcome. However, the absence of that single determinant can explain the absence of the outcome, since the necessary condition cannot be compensated by other determinants (Dul, 2016a).

Although its foundations date back to David Hume’s philosophy of causation (Hume, 1777), the necessary condition logic has recently undergone significant conceptual and practical development (Dul, 2016a; Dul et al., 2018), emerging as an intuitive and robust methodology for identifying necessary-but-not-sufficient conditions in data sets (Karwowski et al., 2016). For instance, Necessary Condition Analysis (NCA) has recently been applied to the relationship between intelligence and creativity (Karwowski et al., 2016), to the relationship between *hedonia*, experiencing pleasure, enjoyment and comfort, and *eudaimonia*, the subjective feeling of happiness – in the context of tourism experiences (Lee & Jeong, 2019), and to the impact of marketing and capability for innovativeness on firm performance (Tho, 2018).

However, to the best of our knowledge, NCA has not previously been applied to consumer behaviour or consumer ethics (Hassan et al., 2022). This research seeks to address this gap by applying a multiplicative model of causality to the relationship between consumer emotions and ethical decision making, thereby providing a more accurate picture of the (affective) conditions without which the desired outcome (consumer ethical decisions) cannot occur.

Traditional statistical methods used to test multiple predictors of outcomes, such as multiple linear regression or structural equation modelling (Hair et al., 2019), assume

that each predictor is “sufficient to increase the outcome but none is necessary” (Dul, 2016b: 11). These general linear models presume that causality is additive, and so can be expressed as: $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + (\dots)$. Based on these estimation methodologies, if one cause tends to zero, the ability to predict the outcome will be reduced, but this impact can be compensated by increasing the predictive capability of other determinants (Dul, 2016a).

Necessary Condition Analysis, or NCA, is a new data analytic tool that can be used to test hypotheses examining the necessary-but-not-sufficient contributions of one or various determinants (independent variables – X) to certain outcomes (dependent variables – Y) (Dul, 2016a). Necessary Condition Analysis complements traditional sufficient logic approaches and specifies the critical determinants that prevent an outcome from existing, assuming that causality is multiplicative: $Y = X_1 \times X_2 \times X_3 (\dots)$ (Goertz, 2003). NCA predicts whether the absence of a single factor produces a “guaranteed failure” of the desired outcome (Dul, 2016a), rather than predicting how many factors may contribute to the outcome. In addition, the NCA approach estimates the necessity effect size of one (or more) independent variable(s) for a given value of the dependent variable (Dul et al., 2018), identifying the levels of necessity of the determinants through bottleneck tables.

Traditional variants of linear models draw trend lines through the middle of the data based on the average. The NCA, on the other hand, draws ceiling lines – expressed as $Y=f(X)$ – in the upper left corner of the scatter plot of the data, separating the “empty zone” from the “full zone” (Dul, 2016a). The presence and size of an empty area in the upper left corner indicates the existence of a necessary condition. However, in practice, some exceptions (outliers, counter-examples or measurement errors) may be captured and displayed in the data, such that the empty zone above the ceiling line may not always be

completely empty. The NCA approach provides two recommended techniques to draw the ceiling line: the Ceiling Envelopment–Free Disposal Hull (CE-FDH), a nondecreasing piecewise linear function for the upper left observations of the scatter plot; and the Ceiling Regression–Free Disposal Hull (CR-FDH), a smoothing approach that draws an ordinary least squares regression line through the upper-left observations (Dul, 2016a). CE-FDH is the default nonparametric tool and particularly useful for discrete variables (Dul, 2016b). The effect size (d) of a necessary condition determines the magnitude of the constraint posed by the determinant (X) to the outcome (Y), and can be represented by “the size of the ceiling zone compared to the size of the entire area that can have observations” (Dul, 2016b: 29). Thus, the effect of the necessary condition is stronger when the relative size of the no observation zone created by the ceiling line is larger. The effect size of a necessary condition can range from 0 to 1 ($0 \leq d \leq 1$). Dul (2016b) offers a general classification of the effect size as follows: an effect size of $0 < d < 0.1$ indicates a “small effect”, with $0.1 \leq d < 0.3$ indicating a “medium effect”, $0.3 \leq d < 0.5$ a “large effect”, and $d \geq 0.5$ a “very large effect”.

3. Methods

3.1. Sample and procedure

A scenario-based approach was used to introduce ethically relevant content to the research. Scenarios provide respondents with concrete and detailed stimuli that can closely approximate real-life judgments or decision situations (Alexander & Becker, 1978). As such, they are able to elicit from individuals their beliefs, choices and intended behaviours; in this case concerning ethically relevant issues (Weber, 1992). Scenarios are

commonly used to collect empirical data on consumer ethics (Hassan et al., 2022), and thus were deemed appropriate to the objectives of the research.

Three different ethical scenarios were applied to reduce situation/context bias (MacKenzie & Podsakoff, 2012). The scenarios used covered the three questionable consumer behaviours offering the greatest contrast, as proposed by the Muncy–Vitell Consumer Ethics Scale (Muncy & Vitell, 1992; Vitell & Muncy, 2005), and verified in subsequent research (Escadas et al., 2020). The three behaviours are: actively benefiting from illegal activities (price tag switching scenario); passively benefiting from a mistake or oversight (keeping extra money mistakenly handed back by a bank teller scenario); and no harm/no foul activities (photocopying a copyrighted book scenario). The changing price tag (Yacout & Vitell, 2018), getting too much change (Singh et al., 2018) and buying counterfeit products instead of paying the full price for copyrighted items (Zhao et al., 2020) are some of the most used and tested ethical scenarios in recent marketing literature (Hassan et al., 2022). The scenarios used are presented in Appendix 1.

The scenarios involved three characters whose behaviours participants were asked to evaluate. This is because it is difficult to directly observe participants' ethical decision making in reality (Weber, 1992). Relying on the reporting of self-behaviours is likely to be influenced by social desirability bias (Cohen et al., 1993; Fernandes & Randall, 1992). As such, examining the (un)ethical behaviours (Chung & Monroe, 2003) of another person (i.e., proxy subject) has been suggested by previous studies in consumer ethics (Cohen et al., 1993; Fernandes & Randall, 1992) to be an effective way to overcome these challenges and obtain measures of consumers' ethical behaviours.

Data were collected using face-to-face street and classroom interviews. Four prepared and highly trained interviewers were responsible for data collection. They were identified as academic researchers to provide seriousness to the response task and

instructed to select respondents in the most random way, considering age, gender, appearance or facial expressions. The classrooms were randomly selected from the business schools of the two largest universities in the region – two classes from one university and two classes from the other. After a brief explanation of the study, participants were invited to fill in a paper-and-pencil self-administered questionnaire to avoid interviewer bias (Bowling, 2005). To alleviate concerns about common method bias, the recommended preventive remedies were applied regarding questionnaire length, clear wording, ease of answer, and motivating design (Baumgartner et al., 2021; MacKenzie & Podsakoff, 2012), which were previously tested through the pre-test. In addition, subject anonymity, response confidentiality and no right or wrong answers were reinforced in the foreword of the questionnaire to reduce social desirability bias (Larson, 2019). No incentives were offered to participants for completing the task. A valid sample of 415 individuals was collected. The average age of the sample was 29 years (SD. 12 years), 58% were women and less than half were students. Table 2 provides a detailed overview of the sample.

INSERT TABLE 2 ABOUT HERE

3.2. *Measures*

Eight specific discrete emotions – four positive (happiness, gladness, satisfaction, and excitement) and four negative (sadness, guilt, discomfort, and shame) – were evaluated on a 7-point scale ranging from 1– “Not at all” to 7– “Very much”. These emotions were taken from the 17 goal-directed emotions proposed by Bagozzi et al. (1998), and operationalised through single measures to better understand the role of each emotion on the outcome (Bergkvist, 2016). While Bagozzi et al. (1998) specifically examined emotional experiences associated with the success or failure of achieving a goal, we adapted the scale by simply asking participants to rate the (eight) emotions they

were feeling in the moment. Indeed, prior contributions indicate that single-item measures minimise respondent refusal (Bergkvist, 2015), reduce common methods bias (Bergkvist & Rossiter, 2007) and have similar predictive validity to multi-item scales (Diamantopoulos et al., 2012); they are therefore recommended for use in marketing research (Bergkvist, 2015). Table 3 exhibits the descriptive statistics, correlation matrix and Variance Inflation Factor of the single emotions analysed to infer individual-item reliability and validity (Biscaia et al., 2018). The emotions were presented alternately and ordered randomly to minimise common method bias (Podsakoff et al., 2003).

After reading each scenario describing a real-life situation involving ethically questionable consumer behaviours, respondents were then asked about the different stages of the ethical decision making process. Rather than focusing on a single stage, as has been the more common approach in the literature, participants were asked about all the stages (Rest, 1986). Ethical awareness was measured using the one-item scale “For me, the behaviour described in the scenario above involves an ethical problem” proposed by Karande et al. (2000), as rated on a 7-point Likert scale from 1–“Strongly disagree” to 7–“Strongly agree”. Ethical judgment was evaluated using a four-item modified version of Reidenbach and Robin's (1990) multidimensional scale of ethics, with items rated on a 7-point semantic differential scale: “For me, the situation described in the scenario above is: wrong–right; unfair–fair; unethical-ethical; not morally right-morally right”. Ethical intention was captured through the one-item scale used by Vitell and Patwardhan (2008) and Vitell et al. (2001), with respondents indicating if they would act in the same manner as the consumer depicted in the scenario, on a 7-point Likert scale ranging from 1–“Strongly disagree” to 7–“Strongly agree” (e.g. “I would act as the same manner as Mary in the situation described above”). Finally, ethical behaviour was assessed by a single item, rated on a 7-point Likert scale, which asked respondents about their behaviour

with regard to each of the scenarios presented (e.g., “I usually keep extra money mistakenly handed to me by a cashier for myself”) (Escadas et al., 2019b). Scales measuring ethical judgement, ethical intention and ethical behaviour were reversed, with higher scores indicating a more ethical decision while lower scores described an unethical decision.

INSERT TABLE 3 ABOUT HERE

4. Results

Common method variance (CMV) when using self-reported scales is a potential source of measurement error when data come from a single source (MacKenzie & Podsakoff, 2012; Podsakoff et al., 2003). To prevent CMV, preventative procedures (Podsakoff et al., 2012) were carried out in the design and application of the questionnaire, such as keeping the questionnaire short, using clear wording, reinforcing the anonymity and confidentiality of the data, making clear that there are no right or wrong answers, and having the measures to assess predictors and criterion constructs spatially separated (Min et al., 2016; Podsakoff et al., 2003). In a second stage, Harman’s single factor test was used to evaluate the variance explained by a single factor. This exploratory factor analysis confirmed that the results from the unrotated factor solution show the variance explained by a single factor is below the cut-off criteria of 50% (Podsakoff et al., 2003). In addition, the Common Latent Factor Method was also applied. Here, the square of the unstandardised weight of each constrained path showed that the amount of common variance between all observed variables was lower than the recommended threshold of 50% (Min et al., 2016; Podsakoff et al., 2003). Based on both analyses, there is no evidence of common method bias in the current study.

4.1. Hypotheses Testing

To test the necessary-but-not-sufficient relationship between emotions and consumer ethical decision making, multivariate necessary condition analyses were applied using the NCA package in R (Dul, 2018). To achieve statistical significance and test the randomness of the observed effect size, approximate permutation tests were performed with 10,000 random resamples, with a low sampling error achieved ($p < 0.05$) (Dul et al., 2018). Tables 4–7 and Figure 1 show the results. Regarding ethical awareness (Table 4), the NCA effect sizes (CE-FDR) were $d_1 = 0.167$ (happiness and ethical awareness) and $d_2 = 0.111$ (gladness and ethical awareness), confirming that happiness and gladness are necessary-but-not-sufficient for consumer ethical awareness (H1a and H1b). The other necessary relationships tested were found not significant. In addition, according to the recommended threshold value of $d = 0.10$ proposed by Dul (2016b), happiness and gladness were found to exert a *medium effect* on consumer recognition of an ethical issue ($0.1 \leq d < 0.3$).

INSERT TABLE 4 ABOUT HERE

Evaluating the necessary relationship between emotions and consumer ethical judgments, the NCA results indicate that the effect sizes (CE-FDR) of the necessary condition were $d_1 = 0.208$ (happiness and ethical judgment), $d_2 = 0.208$ (gladness and ethical judgment), and $d_3 = 0.042$ (satisfaction and ethical judgment) (Table 5). The findings demonstrate that happiness (with a medium effect), gladness (with a medium effect) and satisfaction (with a small effect) are necessary conditions for consumer ethical judgments, thus confirming H2a, H2b and H2c.

INSERT TABLE 5 ABOUT HERE

Analysing ethical intention, the NCA effect sizes (CE-FDR) were $d_1 = 0.278$ (happiness and ethical intention), $d_2 = 0.278$ (gladness and ethical intention), and $d_3 =$

0.111 (satisfaction and ethical intention), confirming H3a, H3b and H3c (Table 6). The data show that happiness, gladness and satisfaction (all exerting a medium effect) are necessary for ethical intention and that a high level of ethical intention is only possible with medium levels of these positive emotions. In addition, ethical intention is the stage of the ethical decision making process in which emotions exert the most significant effect.

INSERT TABLE 6 ABOUT HERE

Concerning ethical behaviour, the final step of the decision making process involving ethics, the results for the NCA effect sizes (CE-FDR) were $d_1 = 0.250$ (happiness and ethical behaviour), $d_2 = 0.222$ (gladness and ethical behaviour), and $d_3 = 0.111$ (satisfaction and ethical behaviour), confirming H4a, H4b and H4c (Table 7). Happiness, gladness and satisfaction (with a medium effect) are necessary-but-not-sufficient causes of ethical behaviour and the absence of these positive emotions can explain the absence of ethical behaviour.

INSERT TABLE 7 ABOUT HERE

The empty space in the upper left corner of each scatter plot (Figure 1) indicates that high levels of ethical decisions are not possible with low levels of positive emotions, particularly happiness, gladness and satisfaction. This graphical analysis suggests that these positive emotions are real constraints on consumer ethics and that higher levels of ethical choice will only be possible if a minimum level of positive emotion is being felt by the consumer.

INSERT FIGURE 1 ABOUT HERE

4.2. Threshold Testing

The specific level of each emotion necessary for each stage of consumer ethical decision making process is presented in the bottleneck tables. For each level of the outcome (in our research, ethical decision making stages), the tables show how many and which levels of each determinant (emotions) are required (Dul, 2016a).

The results obtained show that for a medium level of ethical awareness (4 on a 7-point scale), no emotions are necessary (Table 4). However, for a slightly favourable level of ethical awareness (4.6), two positive emotions – happiness and gladness – are necessary, with a minimum level of 3 for happiness and 2 for gladness. For the highest level of ethical awareness, happiness and gladness must have a value of at least 3 on a 7-point Likert scale. Thus, when the required emotions are below 3, the highest levels of consumer ethical awareness will not occur.

Regarding ethical judgment, even to reach a low level (1.6 on a 7-point scale), happiness and gladness must rate at least 2. To reach the highest levels of ethical judgments (5.8 or higher), happiness must have, at least, a value of 3, gladness a value of 3 and satisfaction a minimum value of 2 (Table 5).

In addition, and in a similar way, medium levels of ethical intention and ethical behaviour (4 on a 7-point scale) require, at the least, a value of 2 for happiness, gladness and satisfaction (Tables 6 and 7). For the highest levels of ethical intention and behaviour, happiness, gladness and satisfaction must be at least 3, 3 and 2 respectively.

5. Discussion

This research sought to analyse the necessary relationship between emotions and consumer ethical decision making, and specify the necessity levels required for consumer ethical choices and behaviours. To achieve these goals, the statistical method Necessary

Condition Analysis (Dul, 2016a) was used, as it allows necessary conditions to be identified and measured in data sets. The findings indicate that based on our sample, emotions play a pivotal role in consumer ethics. Specifically, emotions appear as a necessary-but-not-sufficient condition for ethical decisions and actions. These results in the context of marketing research reinforce conclusions drawn from neurobiology, which reveal an association between impairments in emotional processing and impairments in moral judgment and action (Koenigs et al., 2007), demonstrating that emotions are necessary for human morality (Young & Koenigs, 2007).

Our data further show that deficits in positive emotions can lead to deficits in ethical decisions, such that high ethical judgments and behaviours are only possible with medium levels of positive emotions – i.e., happiness, gladness and satisfaction. These findings appear significant not just for business but for everyday life, suggesting a spiral-like effect where the lack of positive emotions leads to less ethical decisions, which in turn lead to less positive (and more negative) emotions. On the flip side, the results also highlight the possibility of a virtuous ethical cycle (Thøgersen & Ölander, 2003), where positive emotions allows us to make more ethical decisions, which then induce more positive emotions (Escadas et al., 2020). Thus, anything that fosters such positive emotions, for instance love or social connections, which have been identified as key determinants of happiness and health (Waldinger & Schulz, 2010), will also contribute to more ethical actions.

While previous research had proposed that emotion is necessary for ethical decision making (Greene et al., 2001, 2004; Haidt, 2001), it remained unclear which emotion(s) are truly necessary (Huebner et al., 2009; Zollo, 2020). The present research provides relevant empirical evidence in this regard. Across a sample of over four hundred individuals and using a proven and sensitive analytical method to assess the *necessary-*

but-not-sufficient patterns of relationships (Dul, 2016a), we have demonstrated that happiness, gladness and satisfaction – positive emotions – are a necessary condition, but not automatically sufficient, for ethical awareness, judgment, intention and behaviour. In addition, the NCA effect size was strongest in the case of happiness and gladness, both with a medium-to-strong effect. The ethical decision making stage most influenced by positive emotions was ethical intention, followed by ethical behaviour. Our research also revealed that positive emotions are critical determinants for reaching desired ethical decisions, and therefore must be considered as a constraint for achieving a high level of consumer ethics.

The role identified for happiness is perhaps unsurprising. Happiness is a positive emotion characterised by the feelings of jubilation (Buytendijk, 1950) and pleasure (Russell, 1980) generated when individuals do their favourite things (Izard, 1977) and achieve a reward (Roseman, 1991). Happy people typically tend to be socially outgoing, communicative, relational, and able to share their good feelings with others (Shaver et al., 1987). Furthermore, the thoughts of happy individuals appear to be characterised by a positive outlook, a focus on the bright side of things, and feelings of relative invulnerability to trouble (Shaver et al., 1987). These features help to explain the crucial role of happiness in predicting consumer ethics: optimistic people who seek contact and involvement with others and tend to see the positive side of things and of life are committed to sustaining a reward situation, in this instance through future favourable emotions that may arise from ethical behaviours. The other positive emotions necessary for consumer ethical decisions, gladness and satisfaction, are instances of joy (Bagozzi et al., 1998) and share many of the characteristics described for happiness (Roseman, 1991).

Our empirical study has demonstrated the essential role of positive emotions for consumer ethical decision making. This role may be activated by retrieving relevant

information from memory in a short time (Isen et al., 1978; Natale & Hantas, 1982) and/or by providing an affective evaluation of the situation (Clore et al., 2001; Schwarz & Clore, 1996). In addition, the *somatic marker hypothesis* (Damasio, 1994) provides support for the idea of emotion as an internal alarm mechanism (Salvador & Folger, 2009) that rapidly signals the prospective consequences of an action, providing relevant – conscious or unconscious – information for making fast, beneficial and advantageous ethical decisions (Bechara & Damasio, 2005). Thus, when individuals are feeling positive, they tend to perceive the environment as less risky and less uncertain, and will be more optimistic and more likely to overestimate positive outcomes (Loewenstein et al., 2001) – which promotes ethical choices. Conversely, when individuals are feeling negative, they tend to see situations as more dangerous and to overestimate the likelihood of negative outcomes and events (Nygren et al., 1996; Yuen & Lee, 2003), reducing – or even eliminating – ethical decisions.

Recent research suggests that emotions influence consumer decisions (Achar et al., 2016). Agrawal, Menon, and Aaker (2007) examined the effectiveness of health messages, finding that when people are feeling positive emotions such as happiness and peacefulness, compatibility between emotions and the referent in a message enhances information processing. Discrete emotions can thus explain why the effectiveness of the same stimulus may differ from individual to individual. This crucial role of positive emotions on consumer decision making is now further supported in the current research, indicating that happiness, gladness and satisfaction are necessary but not automatically sufficient for ethical decisions and behaviours, and that the desired ethical actions can only be achieved if a minimum level of these positive emotions is being felt.

6. Research Contribution and Implications

This paper contributes to the consumer ethics literature in a number of meaningful ways. First, we contribute to a growing literature examining the role of emotions in consumer ethics (Escadas et al., 2019a; Septianto et al., 2020; Singh et al., 2018; Yacout & Vitell, 2018; also see Hassan et al., 2022 for a recent systematic review). Consistent with these studies, we offer evidence for a significant role of emotions in driving ethical decision making. More importantly, we examined the necessary relationship between different emotions and consumer ethical decision making. This is significant because prior research into the relationship between emotions and consumer ethics has focused on the traditional sufficient logic paradigm (Hassan et al., 2022), presuming that causality is additive.

Thus, one of the most relevant contributions of this study is methodological, given that the NCA methodology has not yet, to the best of our knowledge, been applied in this context. NCA is an innovative and robust statistical methodology that allows the necessary determinants for a particular outcome, as well as their required levels, to be identified. Past research examining the relationship between emotions and ethics has typically relied on traditional average-based approaches; however, these can only imperfectly evaluate whether one construct is a necessary condition of another. Such sufficient logic methods estimate the necessary relationship through the distribution of raw scores, thus testing a different aspect of relationships rather than necessity (Karwowski et al., 2016). NCA, on the other hand, draws ceiling lines in the upper left corner of the scatterplot, measuring the effect size of the constraint posed by the determinant to the outcome and specifying the level of a single factor that will lead to the failure of a desired outcome (Dul, 2016a), thereby correctly estimating the necessary-but-not-sufficient condition.

One of the most relevant arguments for the theoretical and practical relevance of NCA is the absence of a *compensation mechanism* (Dul, 2016a). In contrast with traditional sufficient approaches, the necessary-but-not-sufficient logic requires each single determinant to achieve a minimum level to allow the outcome to occur, independently of the contribution of the other determinants, which cannot compensate the failure of one (Dul, 2016a). In other words, a desired outcome can only be achieved if a specific determinant increases towards a minimum level of necessity. Our study specifies the levels of the conditions required for higher levels of consumer ethical decisions and behaviours (namely happiness, gladness and satisfaction), underlining their key role in predicting consumer ethics. This research also shows that these emotions – happiness, gladness and satisfaction – are necessary but not automatically sufficient for consumer ethical decision making. These findings not only identify exact determinants of consumer ethics, but also extend the business literature by explaining how ethical decision making is shaped, and what might cause differences across individuals (and situations) in the extent to which ethical choices are made.

Regarding managerial implications, this study offers some interesting insights into the nature of ethical decisions and how they can be encouraged. Our findings on the significant role of positive emotions in consumer ethics could be particularly useful for marketers. They highlight the importance of identifying ways to induce positive feelings in consumers, in order to promote ethical behaviours. Previous studies have identified different ways marketers can elicit such positive emotions, such as encouraging “smiling” customer service (Luangrath et al., 2020). In addition, research in the retailing context has noted the value of environmental factors, such as a creative store atmosphere (Roggeveen et al., 2020) and enhanced sensory arousal (Silva et al., 2021). Finally, given the emergence of technology-related media, marketers can seek to improve favourable

customer experiences (Velasco & Obrist, 2021) through virtual reality (Flavián et al., 2019).

In addition, public authorities can also benefit from this research. Public institutions have long tried to find ways to stimulate ethical decisions and behaviours towards policy measures – such as those promoting recycling, encouraging the use of sustainable transportation solutions, reducing plastic consumption, decreasing retail theft, or preventing excessive alcohol consumption. Based on the findings of the current research, public authorities could design communication messages that arouse happiness, gladness and satisfaction, rather than resorting to the commonly used negatively framed, or even fear based messaging in such contexts (Brennan & Binney, 2010; Pounders et al., 2018).

This could also be very useful for Global Health Authorities seeking to control the spread of illnesses, as was the case Coronavirus/COVID-19, through the promotion of the responsible individual behaviours of social restraint, mask wearing, and vaccination (Chou & Budenz, 2020; Reddy & Gupta 2020). Finally, to the best of our knowledge, this study is the first to apply NCA to consumer behaviour and ethical decision making contexts. The results are significant and the conclusions powerful; and they provide practitioners access to a novel, intuitive and robust (Karwowski et al., 2016) analytical tool that evaluates *necessary-but-not-sufficient* relationships, moving ahead from sufficient approaches to necessary conditions.

7. Conclusion

For years, academics and practitioners have shown a growing interest and effort in understanding how consumer ethical decisions and behaviours are formed, and how

they can be promoted. This research examines the necessary relationship between emotions and consumer decision making involving ethics, and specifies the levels of the conditions required for high-level consumer ethical choices and behaviours. Whereas most previous research has explored a sufficient “average-based” logic, we applied a new analytical method for identifying and measuring necessary conditions in data sets – Necessary Condition Analysis (Dul, 2016a).

This research advances our understanding of the role played by emotions in ethical decision making, proposing a necessary relationship between positive emotions and consumer decision making involving ethics. These findings do not reject or detract from existing cognitive theories/models, but rather seek to improve and complement their explanatory capability. Consistent with previous research, our data indicates that both emotional and reasoning mechanisms are activated in ethical judgments and behaviours, and therefore neither of these neural structures can be ignored when analysing consumer ethics.

7.1. Limitations and Suggestions for Future Research

As with any study, the current research has some limitations that may provide relevant opportunities for future contributions. First, and despite the procedures adopted to mitigate any potential influence on research findings, data were collected using street and classroom convenience samples, and included a substantial number of young consumers, restricting the generalisability of the findings. Future research could include probability samples of consumers from a range of age groups, from different countries and cultures, and combining several studies (Cayolla et al., 2023). Secondly, the constructs under study were measured through a paper-and-pencil questionnaire using self-reported scales. Despite the great popularity of this method in the social sciences, as well as the validity and reliability of the scales used, this kind of measurement tools is

intrinsically vulnerable to some degree of inaccuracy relating to respondents' understanding of what is being asked, and their tendency to report their subjective evaluation or reflect social desirability bias (Malhotra et al., 2017). Future advances may overcome these limitations by complementing self-reported scales with neurobiological/biometric measures of emotions, such as fMRI, EEG, hearth rate, eye tracking and/or skin conductance (Robertson et al., 2017), and using experimental research designs (Paramita et al., 2022; Silva et al., 2021). In addition, instead of focusing on unethical situations, future research would do well to compare ethical and unethical scenarios and evaluate the influential role of emotions in both decision processes. Further, additional discrete emotions should be included in analyses – such as anger, disgust or pride – in order to identify their differential role. Moreover, rather than evaluating different discrete emotions, future contributions might seek to manipulate, through an experimental research design, a specific emotion and measure its ensuing effect on consumer ethical decision making process. Finally, qualitative research could provide in-depth information that strongly contributes to explaining the pivotal role of emotions in predicting consumer decisions and behaviours when faced with ethical matters.

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Table 1: Main empirical research on the relationship between emotions and consumer ethics.

Authors	Research objective(s)	Emotions analysed	Ethical situations analysed	Context, sample and sample size	Analytical method	Main findings
Chen, Y. and Moosmayer, D. (2020). <i>Journal of Business Ethics</i> .	The research investigated the influence of guilt on ethical consumption in a Chinese Confucian context, and the moderator role of interdependent self-construal.	Guilt.	Ethical consumption was based on seven items from the “Socially Responsible Purchase and Disposal” scale by Mohr and Webb (2005).	A sample of 314 Chinese consumers, using a mall intercept procedure.	Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were applied using SPSS and AMOS.	The results showed that guilt appeals can stimulate ethical consumption in Confucian cultures, but this relationship is negatively moderated by the relationship between the self and others - interdependent self-construal.
Escadas, M., Jalali, M.S. and Farhangmehr, M. (2020). <i>Journal of Consumer Behaviour</i> .	The research analysed the integrated role of emotions as antecedents and outcomes of consumer ethical decision making.	Four positive (hap, glad, sat and exc) and four negative (sha, gui, sad and disc) emotions as antecedents; and five positive (hap, acc, sat, pri and con) and five negative (disc, gui, sha, rem and sad) post-decision emotions.	Three different ethical scenarios were developed, based on the Consumer Ethics Scale (Muncy & Vitell, 1992; Vitell and Muncy, 2005).	A convenience sample of 433 consumers with no incentives.	Two-step Structural Equation Modelling using AMOS.	Positive emotions lead to more ethical consumer decisions and behaviours, which, in turn, will favour positive post-decision emotions – a “virtuous ethical cycle” was proposed.
Kim, J.E. and Johnson, K. (2014). <i>European Journal of Marketing</i> .	The research evaluated the influence of emotions on people’s moral judgment concerning the purchase of a counterfeit product.	Anger, pride, shame, empathy and gratitude.	A scenario method was used involving a consumption opportunity to purchase a counterfeit T-shirt.	A convenience sample of 195 (study 1) and 69 (study 2) undergraduate students receiving a monetary incentive.	Multiple linear regression (study 1) and two-way ANOVA (study 2).	The results suggest that pride and shame, evoked through an anti-counterfeit campaign, influence moral judgments about the purchase of fashion counterfeits.

Martinez and Jaeger (2016). <i>Journal of Consumer Marketing.</i>	The study explored the influence of moral emotions, along with moral awareness, on moral judgment and purchase intention of counterfeits.	Guilt, anger and gratitude.	A counterfeit purchase scenario.	An online convenience sample of 225 individuals with no incentive.	Two multiple regression analyses were performed.	The findings showed that emotions, moral awareness and moral judgment are key determinants of purchase intention of counterfeits.
Septianto, F., Tjiptono, F. and Kusumasondjaja, S. (2020). <i>Journal of Retailing and Consumer Services.</i>	The research investigates the role of emotions on attenuating consumer double standards.	Anger and compassion.	Local and multinational hotel.	108 participants from an online panel in Indonesia (study 1) and 554 undergraduate students from a public university in Indonesia.	Two-way ANOVA.	The main results indicated that anger and compassion can diminish double standards in consumer ethical judgments.
Singh, J., Garg, N., Govind, R. and Vitell, S. (2018). <i>Journal of Business Ethics.</i>	The research examined emotions as an influencing factor for consumer ethical judgments.	Anger and fear	Three scenarios of getting too much change after eating at a restaurant.	A sample of 224 (study 1) and 97 (study 2) respondents recruited from MTurk with a financial remuneration.	Two-way ANOVA.	The results showed that fear leads to higher levels of ethical judgments regarding the scenario of getting too much change in a restaurant.
Trudel, R., Klein, J., Sen, S. and Dawar, N. (2020). <i>Journal of Business Ethics.</i>	The research examines the relationship between self-threat, affect and ethical choices.	Motivated, good, energetic, positive, bad, optimistic, happy and relaxed.	Fairtrade vs. regular chocolate bars.	Students for course credit (studies 1, 2 and 4) and an online panel (study 3).	Logistic Regression.	The main results demonstrated that ethical choices can be a response to consumers' fundamental need to feel better about themselves after their self-esteem has been threatened - self-restorative function.

<p>Yacout and Vitell (2018). <i>Business Ethics: A European Review</i>.</p>	<p>The paper examined the role of need for cognition (NFC) and three discrete emotions as antecedents of consumer ethical decision making.</p>	<p>Fear, power and excitement.</p>	<p>Four scenarios originally developed from the Consumer Ethics Scale (Muncy & Vitell, 1992).</p>	<p>A convenience sample of 346 individuals from the city of Alexandria, Egypt.</p>	<p>Structural Equation Modelling using AMOS.</p>	<p>The findings indicated that NFC and emotions influence ethical decision making in different ways. Fear, power and excitement negatively influence moral intensity, ethical perception and intentions, mainly in illegal practices and no harm no foul situations.</p>
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Table 2: Sample profile (n = 415).

Profile variable	Variable description	Values (%)
Gender	Female	58.1
	Male	41.9
Age	18–24	48.0
	25–34	21.7
	35–44	16.4
	45–54	7.0
	55–64	4.6
	65+	2.4
Children	None	58.2
	One	17.2
	Two	15.2
	Three or more	9.3
Instruction	Less than high school	51.9
	High school graduate	34.1
	Postgraduate level	14.0
Occupation	Student	44.9
	Employee	38.2
	Self-employed	9.4
	Retired/Pensioner	2.7
	Unemployed	4.8

Table 3: Descriptive statistics, correlation matrix and VIF of the emotions analysed

	Mean	SD	Sk	Ku	1	2	3	4	5	6	7	8
1. Happiness	5.35	1.10	-0.59	0.43	2.747							
2. Gladness	5.20	1.05	-0.48	0.60	.780**	2.703						
3. Satisfaction	4.91	1.19	-0.44	0.40	.490**	.471**	1.427					
4. Excitement	4.46	1.48	-0.53	0.02	.352**	.337**	.322**	1.201				
5. Sadness	2.25	1.38	1.12	0.80	-.234**	-.244**	-.142**	-.120*	1.643			
6. Guilt	2.11	1.45	1.42	1.41	-.117*	-.062	-.114*	-.072	.474**	1.761		
7. Discomfort	2.40	1.38	0.94	0.23	-.170*	-.159**	-.204**	-.087	.503**	.486**	1.610	
8. Shame	1.93	1.32	1.51	1.64	-.086	-.073	-.188*	-.005	.506**	.602**	.510**	1.859
* $p \leq 0.05$ ** $p < 0.01$ *** $p < 0.001$ Variance Inflation Factor (VIF) in bold on the diagonal.												

Table 4: Results of multivariate NCA and bottleneck table for the CE-FDH ceiling technique with the required minimum levels of the necessary condition for different desired levels of the outcome (Ethical Awareness).

Outcome (Y): Ethical Awareness (Actual values)	Determinants (X)							
	Positive Emotions				Negative Emotions			
	1 Happine ss	2 Gladnes s	3 Satisfactio n	4 Exciteme nt	5 Sadness	6 Guilt	7 Discomfo rt	8 Shame
1.0	NN	NN	NN	NN	NN	NN	NN	NN
1.6	NN	NN	NN	NN	NN	NN	NN	NN
2.2	NN	NN	NN	NN	NN	NN	NN	NN
2.8	NN	NN	NN	NN	NN	NN	NN	NN
3.4	NN	NN	NN	NN	NN	NN	NN	NN
4.0	NN	NN	NN	NN	NN	NN	NN	NN
4.6	3.000	2.000	NN	NN	NN	NN	NN	NN
5.2	3.000	2.000	NN	NN	NN	NN	NN	NN
5.8	3.000	2.000	NN	NN	NN	NN	NN	NN
6.4	3.000	3.000	NN	NN	NN	NN	NN	NN
7.0	3.000	3.000	NN	NN	NN	NN	NN	NN
<i>d</i>	0.167	0.111	0.000	0.000	0.000	0.000	0.000	0.000
<i>p</i>	0.032	0.103	1.000	1.000	1.000	1.000	1.000	1.000
Accuracy	100%	100%	100%	100%	100%	100%	100%	100%

NN = Not Necessary

Table 5: Results of multivariate NCA and bottleneck table for the CE-FDH ceiling technique with the required minimum levels of the necessary condition for different desired levels of the outcome (Ethical Judgment).

Outcome (Y): Ethical Judgment (Actual values)	Determinants (X)							
	Positive Emotions				Negative Emotions			
	1 Happine ss	2 Gladnes s	3 Satisfactio n	4 Exciteme nt	5 Sadness	6 Guilt	7 Discomfo rt	8 Shame
1.0	NN	NN	NN	NN	NN	NN	NN	NN
1.6	2.000	2.000	NN	NN	NN	NN	NN	NN
2.2	2.000	2.000	NN	NN	NN	NN	NN	NN
2.8	2.000	2.000	NN	NN	NN	NN	NN	NN
3.4	2.000	2.000	NN	NN	NN	NN	NN	NN
4.0	2.000	2.000	NN	NN	NN	NN	NN	NN
4.6	2.000	2.000	NN	NN	NN	NN	NN	NN
5.2	2.000	2.000	NN	NN	NN	NN	NN	NN
5.8	3.000	3.000	2.000	NN	NN	NN	NN	NN
6.4	3.000	3.000	2.000	NN	NN	NN	NN	NN
7.0	3.000	3.000	2.000	NN	NN	NN	NN	NN
<i>d</i>	0.208	0.208	0.042	0.000	0.000	0.000	0.000	0.000
<i>p</i>	0.000	0.000	0.036	1.000	1.000	1.000	1.000	1.000
Accuracy	100%	100%	100%	100%	100%	100%	100%	100%

NN = Not Necessary

Table 6: Results of multivariate NCA and bottleneck table for the CE-FDH ceiling technique with the required minimum levels of the necessary condition for different desired levels of the outcome (Ethical Intention).

Outcome (Y): Ethical Intention (Actual values)	Determinants (X)							
	Positive Emotions				Negative Emotions			
	1 Happine ss	2 Gladnes s	3 Satisfactio n	4 Exciteme nt	5 Sadness	6 Guilt	7 Discomfo rt	8 Shame
1.0	NN	NN	NN	NN	NN	NN	NN	NN
1.6	2.000	2.000	NN	NN	NN	NN	NN	NN
2.2	2.000	2.000	NN	NN	NN	NN	NN	NN
2.8	2.000	2.000	NN	NN	NN	NN	NN	NN
3.4	3.000	3.000	2.000	NN	NN	NN	NN	NN
4.0	3.000	3.000	2.000	NN	NN	NN	NN	NN
4.6	3.000	3.000	2.000	NN	NN	NN	NN	NN
5.2	3.000	3.000	2.000	NN	NN	NN	NN	NN
5.8	3.000	3.000	2.000	NN	NN	NN	NN	NN
6.4	3.000	3.000	2.000	NN	NN	NN	NN	NN
7.0	3.000	3.000	2.000	NN	NN	NN	NN	NN
<i>d</i>	0.278	0.278	0.111	0.000	0.000	0.000	0.000	0.000
<i>p</i>	0.000	0.000	0.004	1.000	1.000	1.000	1.000	1.000
Accuracy	100%	100%	100%	100%	100%	100%	100%	100%

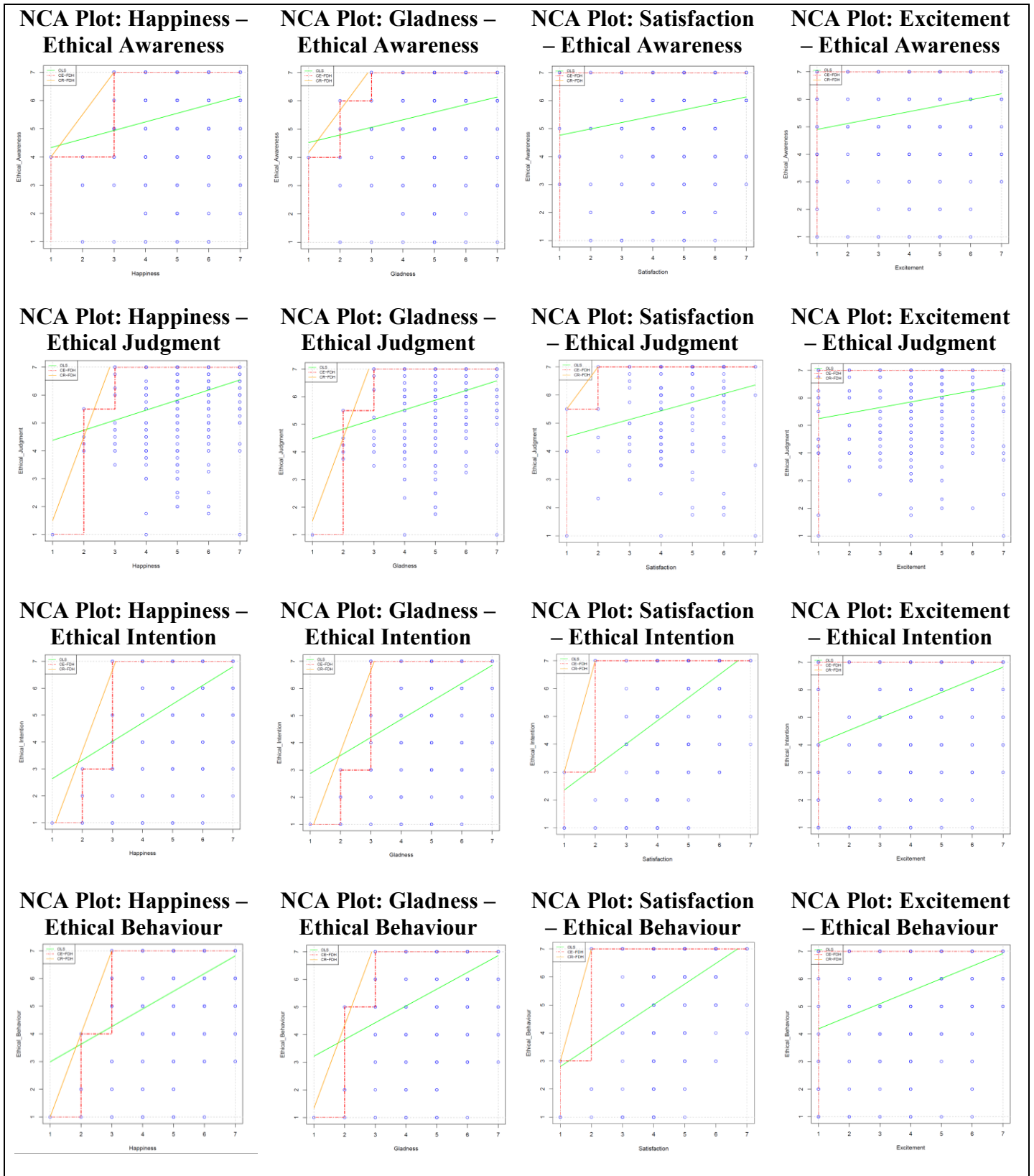
NN = Not Necessary

Table 7: Results of multivariate NCA and bottleneck table for the CE-FDH ceiling technique with the required minimum levels of the necessary condition for different desired levels of the outcome (Ethical Behaviour).

Outcome (Y): Ethical Behaviour (Actual values)	Determinants (X)							
	Positive Emotions				Negative Emotions			
	1 Happine ss	2 Gladnes s	3 Satisfactio n	4 Exciteme nt	5 Sadness	6 Guilt	7 Discomfo rt	8 Shame
1.0	NN	NN	NN	NN	NN	NN	NN	NN
1.6	2.000	2.000	NN	NN	NN	NN	NN	NN
2.2	2.000	2.000	NN	NN	NN	NN	NN	NN
2.8	2.000	2.000	NN	NN	NN	NN	NN	NN
3.4	2.000	2.000	2.000	NN	NN	NN	NN	NN
4.0	2.000	2.000	2.000	NN	NN	NN	NN	NN
4.6	3.000	2.000	2.000	NN	NN	NN	NN	NN
5.2	3.000	3.000	2.000	NN	NN	NN	NN	NN
5.8	3.000	3.000	2.000	NN	NN	NN	NN	NN
6.4	3.000	3.000	2.000	NN	NN	NN	NN	NN
7.0	3.000	3.000	2.000	NN	NN	NN	NN	NN
<i>d</i>	0.250	0.222	0.111	0.000	0.000	0.000	0.000	0.000
<i>p</i>	0.000	0.000	0.002	1.000	1.000	1.000	1.000	1.000
Accuracy	100%	100%	100%	100%	100%	100%	100%	100%

NN = Not Necessary

Figure 1: Visualisation of the NCA scatterplots across the four positive emotions (X) and the four stages of consumer ethical decision making (Y).



The green lines denote the linear correlational function; the yellow lines denote the CR-FDH ceiling line; and the red lines denote the CE-FDH ceiling line.

APPENDIX 1

Used Scenarios

Scenario 1: Photocopying a book.

James is a Master's student. After the first class of the semester, and when analysing the program of his favourite subject, James verifies that there is a book recommended in the bibliography that covers almost all the matter to be taught. Most of James's colleagues are ordering this book from the library and photocopying it. James decided to do the same.

Scenario 2: Switching a price tag in a shop, to pay less for a shirt.

On a Saturday, Mary decided to go shopping. She entered a clothing store and "fell in love" with a shirt. However, the price of the shirt was too high for Mary's disposable income. On another shelf, Mary found a shirt of the same colour, with some resemblance to the first, which cost less than half of her favourite shirt. Taking advantage of the high movement in the store, Mary decided to discreetly change the labels with the price of the shirts, getting her favourite shirt for a much lower price.

Scenario 3: Keeping extra money mistakenly handed by a bank teller.

On a beautiful spring morning, Anthony went to his bank to carry out a bank survey, since he had a family party in this weekend. There were many people at the branch, and the service was rushed by the employee. At the same time, Anthony requested the withdrawal of EUR 200 and the employee proceeded to process the operation. To shorten the time of service, the employee took the money from his box, counted manually, and handed the notes to Anthony.

Already outside the branch, and when checking the amount raised, Anthony verified that he had been delivered EUR 300. Since he was already outside the branch, Anthony decided to go to his car and return home quietly.