"Animal Welfare" Practices along the Food Chain:

How Does Negative and Positive Information Affect Consumers?

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1. Introduction

Managing a global brand means developing its equity but also protecting it from global challenges (Shocker et al., 1994) and from the risk of negative shocks that may affect a brand (Okada and Rubstein, 1998), a multi-national company (Klein and Dawar, 2004) or a whole industry (Roehm and Tybout, 2006). Negative information shocks may arise because of sudden product-harm crises or scandals (Klein and Dawar, 2004; Roehm and Tybout, 2006), such as food-borne disease outbreaks or environmental violation practices. In these situations, providing positive brand information can mitigate the effect of negative information shocks on consumers' brand evaluations and buying intentions (Smith and Vogt, 1995; Okada and Rubstein, 1998; Klein and Dawar, 2004; Roehm and Tybout, 2006).

In the latest thirty years, many researchers have analyzed the effect of positive information counteracting negative information shocks on consumers' perceptions and actions (Tybout et al., 1981; Smith and Vogt, 1995; Okada and Rubstein, 1998; Klein and Dawar, 2004; Roehm and Tybout, 2006). They found that the effect of positive brand information largely varies depending on the order that the information is provided to consumers (Smith and Vogt, 1995) and on the content of the positive information (Tybout et al., 1981; Okada and Riebstein, 1998). Specifically, providing *ex post* positive information aiming at denying that the brand was involved in the scandal or product-harm crisis may be ineffective or even harmful to the brand (Okada and Riebstein, 1998; Roehm and Tybout, 2006). On the other hand, providing brand

information that creates brand associations that are distant from the negative brand associations mitigates the effect of the negative information shock, as consumers are "distracted" from the negative information (Smith and Vogt, 1995; Okada and Riebstein, 1998; Klein and Dawar, 2004).

In some circumstances, however, a global brand may find appropriate to anticipate the risk of future negative shocks with ex ante positive information. This may be the circumstance where the brand is affected initially by negative rumors, which are defined as word-of-mouth communications without secure standards of evidence being present and a well-defined information source (Kamins et al. 1997). Only later the brand may be affected by a negative shock, which provides strong unambiguous evidence against the brand. For example, McDonald's has been recently affected by rumors that its animals suffer enormously when raised, handled, transported and slaughtered before their meat being processed and sold at the fast food restaurant. Only later, a well-defined source of information - a Non-Governmental Organization (NGO) called People for the Ethical Treatment of Animals (PETA) - has started providing strong evidence of animal welfare violations to consumers by circulating under-cover videos recorded in some of its chicken suppliers' plants. How should a multi-national company react in a situation where consumers received negative rumors about a global brand, but not a negative shock yet? Should the company release information that "distracts" consumers and create positive associations? Or should the company tackle the problem frontally by providing positive information that is strictly related to the negative shock argument?

This pattern of "waves" of negative information, from rumors to shocks, has recently hit the image of many brands owned by multi-national companies, such as Monsanto, Unilever or Nestle', as well as smaller brands competing in their same industry. Therefore, understanding the

impact of providing *ex ante* positive information that mitigates future negative shocks might have important managerial implications.

The strategic option of anticipating a future negative shock by releasing *ex ante* positive information that is strictly related to the future negative shock has not been fully explored in the literature so far. In this study we start filling this gap by analyzing if *ex ante* positive information that is strictly related to the future negative shock effectively protects the brand from the risk of declining consumers' attitudes.

This paper is organized as follows. In section 2, we present a literature review of our variables of interest and their interaction. We introduce our hypotheses in section 3, while we describe our research methods in section 4. We present our results in section 5 and in section 6 we draw our conclusions and recommended directions for future research.

2. Literature Review

2.1. Negative Information Shocks

Negative information shocks can be defined as strong evidence from a well defined source that suddenly makes a negative attribute salient to consumers. Negative information shocks can create negative brand associations (Klein and Dawar, 2004), affect consumers' attitudes toward the brand and ultimately harm brand equity (Dawar and Pillutla, 2000). In the literature, negative information shocks have also been referred as scandals (Roehm and Tybout, 2006) or product-harm crises, which are well-publicized instances of defective or dangerous products (Dawar and Pillutla, 2000).

Negative shocks can stem from media information of bad outcomes of the consumption of a brand's product, in the case product-harm crises (Klein and Dawar, 2004) such as food-borne disease outbreaks, or from negative publicity of non-governmental organizations (NGOs) advocating against an industry or company practices, such as unethical treatment of workers (Elliott and Freeman, 2003). However, negative information can also come from word-of-mouth (Scott and Tybout, 1981; Tybout et al., 1981; Smith and Vogt, 1995) and rumors, when the source of information transmitted through the word-of-mouth is not well defined (Kamins et al., 1997). There is evidence that word-of-mouth has a stronger negative effect on consumers' evaluation of an object than rumors (Smith and Vogt, 1995).

The magnitude of the effect of negative information shocks on consumers' brand evaluations depends on various factors. First of all, it depends on the content of the information shock, which means whether the negative information is a product-harm crisis (Klein and Dawar, 2004) or a scandal (Roehm and Tybout, 2006). In the case of product-harm crises, such as the consumer outrage at contaminated Coca-Cola cans in Belgium and France in 1999 (The Economist 1999), consumers may perceive a threat for themselves that they were unaware of (Klein and Dawar, 2004), experience fear and develop have responses to cope with it (e.g., Rogers, 1975; Floyd et al., 1990; Tanner et al. 1991). In the case of scandals that harm other entities, such as other people (Elliott and Freeman, 2003), animals, or the environment, consumers may perceive compassion or solidarity (Batson, 1998), as well as different levels of company egregiousness (Klein et al., 2003; Klein et al., 2004), and ultimately start boycotting the brand (e.g., Klein et al., 2004). However, negative information shocks affect consumers' perceptions also depending on the presence of contextual information, which may contribute to clarify who is responsible for

the crisis or scandal (Folkes and Kotsos, 1986), or on consumer characteristics, such as their information processing style (Monga and John, 2008).

A second important factor that explains variation in the effect of negative information shocks on a brand is the target of the information shock, that is whether the information shock hits the brand directly or one of its competing brands within the same industry (Roehm and Tybout, 2006). In some circumstances, the negative information shocks targeting a competing brand (Brand B) may have a negative effect on Brand A. In this case, an information shock on Brand B has a "negative spillover" on Brand A (Roehm and Tybout, 2006), whereas "spillover" is commonly defined as any phenomenon in which information influences beliefs that are not directly addressed in a communication (Ahluwalia et al., 2000; Balachander and Ghose 2003).

A third key factor driving the magnitude of the effect of negative information shocks on consumers' brand attitudes is the initial equity of the targeted brand (Ahluwalia et al., 2000; Dawar and Pillutla, 2000; Pullig et al., 2006). In particular, when consumers have a strong positive attitude towards the targeted brand (Petty and Krosnick, 1995) or commitment for it (Ahluwalia et al., 2000), negative information shocks have a weaker effect. Moreover, differentiation of a brand from competitors can limit the negative spillover from information shocks targeting a competing brand (Roehm and Tybout, 2006). For example, the presence of strong consumers' beliefs that a brand owner follows corporate social responsibility (CSR) principles is likely to mitigate the effect of negative information shocks about that brand, when the negative information is unrelated to the CSR principles.

2.2. Positive Brand Information

Positive information about the brand can stem from the branding firm, through advertising (Weinberger et al., 1981), or from external sources that are related to the firm, as sponsorships or Corporate Social Responsibility (CSR) activities (Klein and Dawar, 2004). Positive brand information usually has the effect of creating or strengthening positive brand associations (Keller, 1993) but it has also the role of moderating the effect of negative information shocks about the same brand (Weinberger et al., 1981; Okada and Reibstein, 1998). In the agricultural economics literature, many recent studies on the interaction between negative and positive information has been applied to the case of genetically-modified food products (Fox et al., 2002; Rousu et al., 2002; Lusk et al. 2004; Wachenheim and VanWechel, 2004; Nayga et al., 2005)

Positive information usually has a weaker impact than negative information shocks (Smith and Vogt, 1995; Fox et al., 2002), as it is recognized to attract less attention than negative information shocks (Scott and Tybout, 1981; Tybout et al, 1981). Moreover, negative information is usually presented in a highly experiential context to consumers (Tybout et al, 1981).

Positive brand information has a different moderating effect of negative information shocks on consumers' brand evaluations according to two major dimensions: the order the information is received (Smith, 1993; Smith and Vogt, 1995) and the distance between the positive and the negative brand information, i.e. whether the two pieces information contradict each other or are about different brand attributes (Tybout et al., 1981; Okada and Reibstein, 1998; Klein and Dawar, 2004). With different levels of these two dimensions, the mitigating effect of positive brand information may vary significantly. First, when provided *ex ante*, positive information generally mitigates the negative effect of word-of-mouth (Smith and Vogt, 1995) and negative

product trial (Smith, 1993), even if the positive and the subsequent negative information contradict each other. Second, when the positive information is provided *ex post* and denies a negative information shock or a rumor, it might be ineffective in moderating the negative brand association or even strengthening it (Tybout et al., 1981; Okada and Reibstein, 1998). Third, when creating positive associations that are distant from the negative associations, *ex post* positive information moderates the effect of negative information shocks (Tybout er al., 1981; Klein and Dawar, 2004).

A third factor explaining variability of the positive information in mitigating negative shocks to competing brands is the initial brand differentiation (Roehm and Tybout, 2006), which means having strength and uniqueness of brand associations (Keller, 1993). When Brand A is not clearly differentiated from the brand targeted by the negative shock (Brand B) and the positive information on Brand A is an *ex post* denial message - such as "the bad thing happened to Brand B has not happened to our Brand A" – then the positive information can reduce or eliminate the negative spillover effect (Roehm and Tybout, 2006). However, in the same circumstance, when Brand A is clearly differentiated from Brand B, positive information on Brand A that denies what happened to Brand B can create a negative spillover that would not otherwise exist and ultimately damage Brand A (Roehm and Tybout, 2006).

Although much has been written about the interaction between positive and negative information about a brand, there are contexts that are increasingly common to global brand owners and that have not been fully addressed by this literature. First, in some circumstances, brand owners are able to expect with a high degree of confidence that a negative shock will hit the majority of its consumers regarding one specific attribute of their product or production process. This is often the case when an advocacy group targets a brand because of practices in the brand owner's

production process that are against the principles of sustainability (Klein et al., 2004, Teegen et al., 2004). In this case, does an ex ante positive information that denies a subsequent negative information shock mitigate the negative impact on consumers' attitudes towards the brand?

Furthermore, in the case that the brand is not initially differentiated from its competitors, does the ex ante positive brand information isolate the brand from the competing brands, or do its positive spillovers impact the competing brands as well?

In the attempt of filling this gap, this paper addresses these two questions by proposing and testing a conceptual framework that builds upon the theory of attitude formation (Fishbein and Ajzen), the theory of prior beliefs (Russo et al., 1998; Carlson and Pearo, 2004; Carlson et al., 2006) and the theory of information spillover across brands (Roehm and Tybout, 2006).

2.3. Consumers' Brand Beliefs, Attitudes and Buying Intentions

Consumers' cognitive process to create their attitudes towards brands and ultimately to establish their buying behavior usually starts from evaluating brand attributes (Fishbein, 1967). By processing information about the attributes of a brand, consumers establish both evaluations and belief strengths for each attribute, such that the combination of the two determines their attitudes towards the brand (Fishbein, 1967). Brand attributes are a category of brand associations, which in turn are a key dimension of brand equity: when a brand has strong, favorable and unique associations, then it is clearly differentiated from other brands (Aaker, 1991; Keller, 1993). Brand attributes may be observed before consumption (search attributes) or only after consumption (experience attributes, Nelson, 1970), but some of them may not be visible neither before nor after consumption (credence attributes, Darby and Karni, 1973). In the case of credence attributes, consumers' belief strengths play a crucial role in establishing their attitudes

towards products, and brand information has a crucial importance in determining consumers' beliefs.

However, consumers' attitude towards a brand does not always predict buying behavior (Fishbein and Ajzen, 1975). On the other hand, consumers' attitudes towards buying the brand, moderated by their subjective norms, predict buying intentions much more accurately (Fishbein and Ajzen, 1975; Sheppard et al., 1988). In turn, buying intentions predict behavior "unless intent changes prior to performance" or "unless the intention measure does not correspond to the behavioral criterion in terms of action, target, context, time-frame and/or specificity". The intention of buying a brand has various measurable dimensions. The most general one is the willingness to do an effort to perform to the buying action (Fishbein and Ajzen, 1975; Eagly and Chaiken, 1993), whereas the nature of the effort may vary according to the context: it may be the willingness to pay to obtain a product from that brand, the likelihood to pay a premium for that brand, or the likelihood to buy the product even if it is not sold in the most favorite purchasing location. A second key dimension of buying intentions is the choice of the brand among alternatives (Fishbein, 1980; Fishbein and Ajzen, 1980), which is the process of comparing and selecting among the intentions associated with each alternatives in the choice set.

In this study, we borrow from these theories predicting the formation of attitudes and buying intentions to use the concepts of consumers' beliefs in the presence of an attribute associated to the brand (Fishbein, 1967) and attitudes towards a brand (Fishbein, 1967).

3. Conceptual Framework and Hypotheses

3.1. The Mitigating Effect of *Ex Ante* Positive Information

The conceptual framework of this study is built upon the theory of attitude formation (Fishbein, 1967; Fishbein and Ajzen, 1975), the role of prior consumers' beliefs on consumer attribute perceptions and product evaluations (Russo et al., 1998; Carlson and Pearo, 2004; Carlson et al., 2006) and the recent literature on the role of negative spillover effects across brand in the same industry (Roehm and Tybout, 2006) (Figure 1).

First of all, when analyzing the interaction between the negative shocks and the positive brand information, we assume that *ex ante* positive information has a larger effect on mitigating the effect of the negative shock than *ex post* positive brand information, consistently with most of the extant literature (Smith, 1993; Smith and Vogt, 1995; Klein and Dawar, 2004). This assumption is also consistent with the theory explaining the impact of prior beliefs and the order of information on consumers' evaluations of objects (Russo et al., 1998; Carlson and Pearo, 2004; Carlson et al., 2006).

Starting from this assumption, we hypothesize that, when it is strictly related to the negative shock, positive information provided *ex ante* mitigates the effect of subsequent negative information shocks on consumers' perceptions and attitudes towards the brand. In order words, when some positive information about Brand A is provided at time *t*, a negative shock at time *t+1* that is strictly related to the positive information will have a lower effect on consumers' attitudes towards Brand A. This hypothesis juxtaposes with findings from previous literature suggesting that *ex post* positive information is more effective when "distracts" consumers from the negative shock (Tybout et al., 1981; Okada and Reibstein, 1998). At the same time, *ex ante*

positive information related to the negative shock seems be considered by various companies as an effective option to respond to the risk of future negative information (e.g., McDonald's 2009; Nestle' 2009). Therefore, we hypothesize that:

***H1*. When strictly related to a negative information shock, *ex ante* positive information mitigates the negative effect of information shocks about the brand on consumers' attitudes.**

Moreover, we hypothesize that *ex ante* positive information not only does mitigate the negative effect of information shock about the brand, but it also makes the negative information shocks having a positive effect on attitudes towards the brand. The major reason why this may happen is that *ex ante* positive information strongly differentiates the brand from its competitors, such that the brand is not considered similar to the others that are part of the same industry. Therefore, when compared to an alternative brand that is hit by a negative shock, consumers may increase their attitudes towards the differentiated brand. This hypothesis is consistent with the theory of positive effects of CSR on future consumers' beliefs (Klein and Dawar, 2004). Moreover, it integrates the evidence that negative shocks on competing brands within the same industry do not have a negative effect on a brand attitude when the brand is strongly differentiated (Roehm and Tybout, 2006). Stated in other words, we hypothesize that:

***H2*. When the *ex ante* positive information is given, the negative information about industry practices has a positive effect on attitudes towards the brand.**

3.2. The Effect of Ordering Negative Information Shocks

We hypothesize that changing the order of negative information shocks results in a significantly different consumers' attitudes towards a brand. Specifically, when the negative information

about industry practices hits consumers before a negative shock about the brand, then final attitudes towards that brand will be significantly higher than when the negative information about the brand comes first. We believe that this could be observed both in the case when *ex ante* positive information is provided and when it is not provided. This is consistent with the theories of information ordering on consumers' evaluation of objects (Russo et al., 1998; Carlson and Pearo, 2004; Carlson et al., 2006) but it is applied to a context where multiple pieces of negative information with different impact magnitude is provided. In other words, we hypothesize that:

H3. **When Negative Information about Industry Practices is given before Negative Information about the Brand, the Negative Effect of Brand Negative Shock on Consumers' Attitudes is mitigated.**

3.3. The Spillover Effect of *Ex Ante* Positive Information

Finally, we hypothesize that giving *ex ante* positive brand information has also a positive spillover effect on consumers' attitude towards competing brands that are not strongly differentiated from the brand receiving the positive information. Specifically, if a brand releases *ex ante* positive information that protects itself from the shock, then this positive information would protect its competitors from information shocks about industry practices when these are not perceived to be different from that brand. This hypothesis is consistent with the negative spillover effects of negative information across brands (Roehm and Tybout, 2006), but rather analyzes the positive spillover effects of positive information across brands. Therefore, we hypothesize that:

H4. **When Brand A and Brand B are not strongly differentiated, *Ex Ante* Positive Information about Brand A mitigates the negative effect of Information Shocks about Industry Practices on Consumers' Attitudes towards Brand B.**

4. Methods

4.1. Sample and Product Selection

To test our hypotheses, we collected data from an on-line experiment on fast food boneless chicken sandwiches and animal welfare issues administered to 394 undergraduate and graduate students from Michigan State University in March 2009.

Fast food restaurants, as well as other private actors within the meat industry, including producers, transporters, slaughters, processors, retailers and restaurants, represent a case of industry recently targeted by negative information shock about their animal welfare practices. Although other negative information hit both fast foods and other actors competing in different industries, we chose the case of animal welfare and fast foods because it is a relatively new issue, where respondents are less likely to have strong beliefs prior to the experiment. Therefore, we expect to find more variation after each information treatment on animal welfare than for after treatments on, say, environmental issues, labor issues or genetically-modified issues. On these latter issues, US respondents received a much heavier information load in the past five to ten years and so they are likely to have stronger prior beliefs (Fox et al., 2002; Rousu et al., 2002; Lusk et al. 2004). Furthermore, fast food restaurants have been already object of previous studies on negative information regarding different attributes (Roehm and Tybout, 2006), that they helped as a reference to build our experimental procedure.

We chose chicken boneless sandwiches as the product of interest because various fast food brands offer a similar product. Therefore, we assume that respondents' initial attitudes towards the fast food brand product do not vary significantly across brands. As regards brands, we selected McDonald's as our brand of reference that receives both the positive and the negative brand information. Moreover, we choose a meat supplier of the Kentucky Fried Chicken (KFC) brand as the references for the negative information about industry practices. Finally, we selected Burger King as the brand of reference receiving the spillover effects from the positive and information on McDonald's. In a pre-test performed at the start of the survey, we made sure that McDonald's and Burger King were not strongly differentiated from each other from a set of brand equity measures as described in the next paragraph.

We chose students from Michigan State University as our population sample since fast food restaurants represent a relevant product category for them. Hence, we hope that students would generally have enough involvement on this subject to undertake a fairly complex questionnaire.

4.2. Research Design

The on-line experiment involved two treatments, one *ex ante* positive brand information and one sequence of negative information shocks. The *ex ante* positive information treatment had two levels, which are present and absent. The positive brand information consisted of a set of reported declarations from differences sources: an advocating NGO (Greenpeace), a certifying NGO (Animal Welfare Society), a university expert on meat and animal welfare and a self-claim from McDonald's. The treatment that gave a sequence of negative information shocks had two levels too: the first level was negative information about industry practices followed by the

negative information about McDonald's, while the second level was negative information about McDonald's followed by negative information about industry practices.

The combination of the two levels for each treatments resulted in four different pair of treatments. Therefore, out of 394 students, four groups of approximately 100 people each undertook a questionnaire with only one pair of treatments. Students were recruited by e-mail through the university student lists. Those accepting to participate were directed with a web-link to the on-line experiment, which took on average 15 minutes.

Each respondent undertook a questionnaire with an initial demographics section plus three following sections. In the initial demographics section, along with a few preliminary questions about age, gender, ethnic group and nationality, respondents were asked how often they go to fast foods, how much they consider themselves knowledgeable about fast foods and about animal welfare issues, as well as two questions measuring how much they value animal welfare.

In the first section of the questionnaire, we developed measures of dimensions of initial brand equity of McDonald's and Burger King, such as brand awareness, brand beliefs and differentiation in terms of animal welfare practices and brand attitudes. Brand awareness was measured by asking respondents what the first five fast food brands coming to their mind are. Brand differentiation in terms of animal welfare associations was measured by asking "do you believe that McDonald's takes more, equal or less effective measures to provide proper animal welfare to chickens and hens raised, transported, and processed for production of food products sold in their restaurants relative to its competitors?". Respondents' belief strength in the association between animal welfare and the brands was measured with a seven-point Likert-scale, where the respondents are asked to strongly disagree/strongly agree with the following

statement: “I believe that Burger King takes effective measures to provide proper animal welfare to chickens and hens raised, transported, and processed for production of food products sold in their restaurants.” Respondents’ attitudes towards the brands were measured with one seven-point Likert-scale question asking “How would you describe your attitudes towards McDonald’s/Burger King?” where the scale was from very negative to very positive.

In the second section of the questionnaire, two groups of respondents were first shown the positive information about McDonald’s treatment, following by a similar set of questions measuring their beliefs and attitudes. The other two groups did not undertake this section of the questionnaire. In the third section, all the four groups of respondents were administered the two negative information shocks. After each information shock, the measurement of respondents’ beliefs and attitudes was repeated.

At the end of the experiment, to compensate respondents for their time spent undertaking the survey, each respondent’s name is included in a lottery organized by the researcher where respondents could win up to five 50$ Amazon.com gift cards.

4.3. The Model

In order to capture the panel nature of the data we have collected, we performed an analysis through a set of latent growth models (LGMs) (Duncan et al, 1999). LGMs can be considered a specific category of structural equation models (SEMs) where the latent factors are the intercept and the slope of the growth of a variable across a group of individuals. Compared to longitudinal panel modes, LGMs have the advantage of both describing single individual’s development trajectory of variables and capturing individual differences in these trajectories over time (Duncan et al, 1999). In particular, the latter characteristic allows the researcher to explore the

factors moderating the intercept and slope of the development trajectory. Similarly to SEMs, limitations of LGMs include the assumption of multi-normally distributed variables and the necessity of large samples (Duncan et al, 1999).

We apply LGMs to analyze the change of consumers' attitudes towards a brand and its competitors after different negative information shocks and to analyze the effect of adding a treatment such as *ex ante* positive brand information. From our data collection, we obtain from each group at least three measured variables over time: initial attitudes at the start of the survey (time 0), attitudes after one negative information shock (time 1), either about industry practices or about the brand, and attitudes after the other information shock (time 2). Similarly, we obtain three measured belief variables, at the initial time (time 0) and after the two information shocks (time 1 and time 2). Each model has latent factors representing the intercept and the slope of the change of consumers' beliefs and attitudes across individuals. In the context of our study, the slope factor measures a change created through experimental manipulations.

As commonly in use in LGMs (Duncan et al., 1999), we fix the loadings from factors to the measured variables at arbitrary values. We instead free the parameters of the factors' mean and the variance, as well as the co-variances among factors. The factors' mean indicates the expected difference between the measurable variables at two different times, while the factors' variance indicates the inter-individual variability around the mean. Finally, the co-variance among factors indicates weather the initial levels of beliefs and attitudes are significantly associated with future changes or not.

In formulas, the LGM we apply has the following generic form:

$$V_1 = l_{11}F_1 + l_{21}F_2 + e_1; \quad (1)$$

$$V_2 = l_{12}F_1 + l_{22}F_2 + e_2; \quad (2)$$

$$V_3 = l_{13}F_1 + l_{23}F_3 + e_3; \quad (3)$$

$$F_1 = a_1M_1 + b_1D_1; \quad (4)$$

$$F_2 = a_2M_2 + b_2D_2. \quad (5)$$

In these expressions, V_1, V_2 and V_3 stand for the measured variables of interest at time 0, time 1 and time 2, F_1 and F_2 represent respectively the intercept and the slope factor, lij represent the loadings from the factors to the measured variables and e_i are the errors. Moreover, M_1 and M_2 are the inter-individual means of the intercept and the slope, while D_1 and D_2 are the inter-individual variances of the intercept of the slope to be estimated. Finally, $Cov(D_1,D_2)$ is estimated to understand if intercept and slope are significantly associated.

5. Results

5.1. The Mitigating Effect of *Ex Ante* Positive Information

To test the hypothesis that *ex ante* positive information related to the negative shocks mitigates its effect on consumers' attitudes (H1), we first run a multi-group LGM where one group receives *ex ante* positive information (Figure 2) and the second group does not receive it. This LGM has three factors: one represents the intercept (F_1) and the other two represent an upward slope (F_2) and a downward slope (F_3). Adding a third, downward slope was necessary to better capture the change of trajectory of attitudes over time caused by the second information shock. As a matter of facts, for the group receiving the *ex ante* positive information, the mean of respondents' initial attitudes towards the brand was V_1=3.31, growing to V_2=4.36 after the

negative information shock about the industry and then decreasing to V_3=3.63 after the information shock about the brand (Table 1).

We test the significance of the change of consumers' attitudes over time to analyze the effect of positive information on consumers' attitudes after receiving the negative shock about the brand and the negative shock about industry practices (H2). We find that the mean and the variance of the three latent factors are significant. This means that the negative information about the industry after the *ex ante* positive information has a positive effect on respondent's attitudes in time 1 (V_2), while the negative information about the brand reduces the brand attitudes significantly from time 1 to time 2 (V_3). However, when *ex ante* positive information is provided, negative information about the brand leaves attitudes at a higher level (V_3=3.63) than at time 0, before the positive information was given (V_1=3.31) (Table 1). When instead respondents receive the sequence of negative information without the ex ante positive information, their attitude towards the brand decreases from time 0 to time 2 (Table 1) and the pattern of growth and decrease is not significant (F_2 and F_3, Table 2).

Furthermore, by running a Lagrange Multiplier (LM) test, we found that the equality constraints among parameters of the model for the treatment group and the model for the control group, i.e. the means and the variances of the factors and the co-variances among them, should be released as they reduce degrees of freedom without a significant increase of the overall fit of the model with the data.

Therefore, the statistical significance of the positive and then negative change of respondents' attitudes when ex ante positive information is provided and the significant difference with the negative trajectory of respondents' attitudes in the control group provides evidence that: 1) *ex*

ante positive information mitigates the negative effect of negative information shock about the brand (H1); when the *ex ante* positive information is given, the negative information about industry practices has a positive effect on consumers' attitudes towards the brand (H2).

5.2. The Effect of Ordering Negative Information Shocks

To test the hypothesis that when negative information about industry practices is given before negative information about the brand, the negative effect of brand negative shock is mitigated (H3), we run a similar multi-group LGM where one group receives the negative information about industry practices before the negative information about the brand, while the other group receives the negative information about the brand first. Therefore, we tested again the statistical significance of mean and variance for each group separately and then the difference across groups with a LM test.

Results show that when *ex ante* positive information is provided, the ordering effect of the two following negative information does not change the final attitudes. Across the two groups with inverted sequences of negative information shocks, the mean of the initial attitudes (V_1) is very similar (3.31 versus 3.38) as well as the mean of the final attitudes (V_3) (Table 3). Moreover, the group receiving the negative information about the industry had a significant increase and then decrease over time, as F_1, F_2 and F_3 are significant, while the group receiving the negative information about the brand has no significant slope effects (Table 4). Therefore, these results do not provide evidence supporting our hypothesis on the effect of ordering negative information (H3). By running a similar multi-group LGM across the two group that did not receive the *ex ante* positive information, we found similar results. We conclude that, in this context, the

ordering of the negative information does not matter, independently whether an *ex ante* positive information is provided or not.

5.3. The Spillover Effect of Ex Ante Positive Information

To analyze the spillover effect of *ex ante* positive information on competing brands, we run another multi-group LGM where one group receives the *ex ante* positive information about McDonald's and another group does not receive it. In this model, the measured variables V_1 to V_3 are respondents' attitudes towards Burger King.

We first made sure that McDonald's brand is not strongly differentiated from Burger King in terms of "animal welfare" associations and initial brand attitudes. Initial respondents' belief strength in the association between McDonald's and the "animal welfare" practices is 2.96 on a seven-point Likert-scale, against 3.10 points for Burger King. Also, only 4.3% of the respondents initially thought that McDonald's was taking more effective animal welfare practices than its competitors, while only 3.4% thought the same about Burger King. Also, respondents' initial attitudes towards McDonald's are equal to 3.46 on a seven-point scale, while initial attitudes towards Burger King were equal to 3.52 points. From these descriptive statistics, we conclude that McDonald's and Burger King are not strongly differentiated.

We found that, when *ex ante* positive information about McDonald's is provided, respondents' attitudes towards Burger King do not decrease over time (Table 5), as there is no significant slope effect (Table 6). When instead *ex ante* positive information about McDonald's is not provided, respondent's attitudes decrease significantly over time, as the slope effect is negative (Table 6). The LM test suggests that all the equality constraints among parameters of these two groups should be released. Therefore, we found evidence supporting the hypothesis that, when

two brands are not strongly differentiated to each other, *ex ante* positive information about a brand mitigates the negative effect of information shocks about industry practices on competing brands (H4).

6. Conclusions

In the marketing literature, a large amount of studies have analyzed the impact of negative information on consumers' buying intentions as well as on the interaction between positive information and negative information (Tybout et al., 1981; Smith and Vogt, 1995; Okada and Rubstein, 1998; Klein and Dawar, 2004; Roehm and Tybout, 2006). One managerial implication arising from previous studies was to respond to information shocks with positive information that "distracts" consumers from the content of the negative information message (Okada and Rubstein, 1998; Klein and Dawar, 2004).

In this paper, we instead examine the role of *ex ante* positive information that is strictly related to the negative information shock. We found that *ex ante* positive information mitigates the negative effect of information shocks about a brand and even makes negative information about industry practices have a positive effect on consumers' attitudes. We also found that these results are robust to the order in which the negative information about the brand and the industry is provided and that positive information may have positive spillovers on competing brands that are not strongly differentiated. These results suggest that, if they are able to anticipate negative information shocks, managers of global brands may effectively protect their brand by tackling the content of a negative shock with strictly related positive information.

However, in this study we have not compared the effect of positive information whose message is strictly related to the negative shock with the effect of positive information that is distant from the content of the negative shock, and so we are not able to recommend which of the two contents of positive information is more effective to protect a brand from the risk of a negative information shock. Therefore, to provide a more complete recommendation to managers if global brands, further research should compare the effectiveness of different contents of positive information. Also, further investigation on the effectiveness of different sources of positive information would provide useful recommendations to elaborate a strategy of response to negative shocks.

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Appendix 1 – Figures & Tables

Figure 1 – The Conceptual Framework: The Mitigating Effect of *Ex Ante* Positive Information on the Negative Information Shock

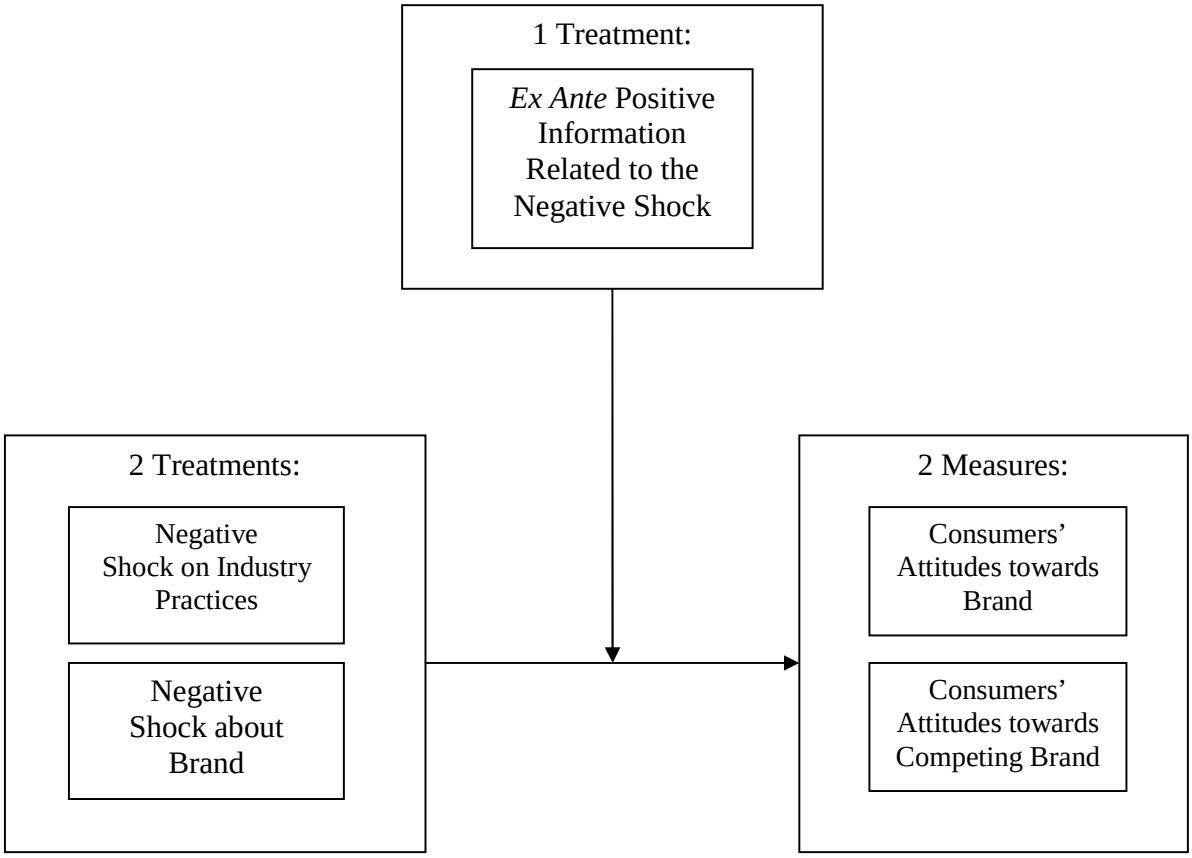
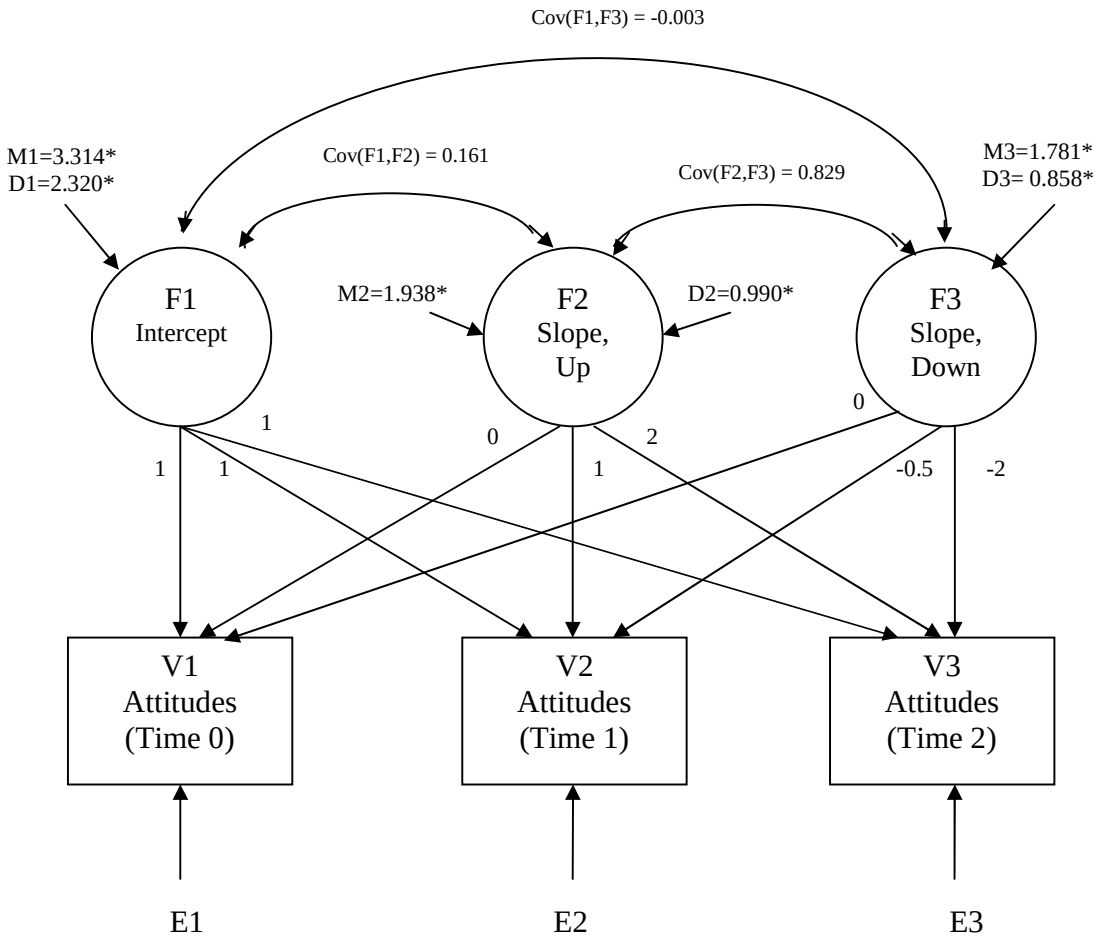


Figure 2 – The Latent Growth Model

The Effect of *Ex Ante* Positive Information on Attitudes towards the Brand



LEGEND:
V1: Initial Attitudes; V2: Attitudes after Negative Info about Industry Practices; V3: Attitudes after Negative Info about Brand;
*: Statistically Significant at a 5% Level.

Table 1 - The Effect of *Ex Ante* Positive Information on Attitudes towards the Brand: Descriptive Statistics

Group 1 - *Ex Ante* Positive Information (Treatment), N=105			
	V1 (Time0)	V2 (Time1)	V3 (Time2)
Mean	3.31	4.36	3.63
Std. Deviation	1.68	1.75	1.64
Group 2 - No Positive Information (Control), N=109			
	V1 (Time0)	V2 (Time1)	V3 (Time2)
Mean	3.82	3.52	2.95
Std. Deviation	1.67	1.64	1.64

LEGEND:

- The treatment Ex Ante Positive Information is administered between Time 0 and Time 1.
- V1: Initial Attitudes; V2: Attitudes after Negative Info about Industry Practices; V3: Attitudes after Negative Info about Brand.
- *: Statistically Significant at 5% Level.

Table 2 - The Effect of *Ex Ante* Positive Information on Attitudes towards the Brand: Parameter Estimates from the Multi-Group LGM

Group 1 - *Ex Ante* Positive Information (Treatment), N=105			
	F1 (Intercept)	F2 (Slope, Up)	F3 (Slope, Down)
Mean (Mi)	3.314*	1.938*	1.781*
Variance (Di)	2.320*	0.990*	0.858*
Group 2 - No Positive Information (Control), N=109			
	F1 (Intercept)	F2 (Slope, Up)	F3 (Slope, Down)
Mean (Mi)	3.817*	-.151	0.284
Variance (Di)	2.320*	0.990*	0.858*
Uni-Variate LM Test: All Equality Constraints between Groups should be Released			

LEGEND:

- F1 has loadings l11=1, l12=1 and l13=1; F2 has loadings l21=0, l22=1 and l23=2; F3 has loadings l31=0, l32=-0.5 and l33=-2.
- *: Statistically Significant at 5% Level.

Table 3 - The Effect of Ordering Negative Information on Attitudes towards the Brand: Descriptive Statistics

Group 1 - Negative Information about Industry Practices first, N=105			
	V1 (Time 0)	V2 (Time 1)	V3 (Time 2)
Mean	3.3143	4.3619	3.6286
Std. Deviation	1.6774	1.7548	1.6365
Group 2 - Negative Information about the Brand first, N=85			
	V1 (Time0)	V2 (Time1)	V3 (Time2)
Mean	3.3882	3.5882	3.6706
Std. Deviation	1.6554	1.6205	1.5916

LEGEND:

- In both groups, the treatment Ex Ante Positive Information is administered between Time 0 and Time 1.
- V1: Initial Attitudes; V2: Attitudes after first Negative Information Shock; V3: Attitudes after second Negative Information Shock.
- *: Statistically Significant at 5% Level.

Table 4 - The Effect of Ordering Negative Information on Attitudes towards the Brand: Parameter Estimates from the Multi-Group LGM

Group 1 - Negative Information about Industry Practices first, N=105			
	F1 (Intercept)	F2 (Slope, Up)	F3 (Slope, Down)
Mean (Mi)	3.314*	1.938*	1.781*
Variance (Di)	2.732*	1.541*	0.898
Group 2 - Negative Information about the Brand first, N=85			
	F1 (Intercept)	F2 (Slope, Up)	F3 (Slope, Down)
Mean (Mi)	3.388*	0.259	0.118
Variance (Di)	2.732*	1.541*	0.898
Uni-Variate LM Test: Six Equality Constraints between Groups should be Released			

LEGEND:

- F1 has loadings l11=1, l12=1 and l13=1; F2 has loadings l21=0, l22=1 and l23=2; F3 has loadings l31=0, l32=-0.5 and l33=-2.
- *: Statistically Significant at 5% Level.

Table 5 - The Spillover Effect of *Ex Ante* Positive Information on Attitudes towards a Competing Brand: Descriptive Statistics

Group 1 - *Ex Ante* Positive Information (Treatment), N=105			
	V1 (Time 0)	V2 (Time 1)	V3 (Time 2)
Mean	3.3524	3.4286	3.3714
Std. Deviation	1.4410	1.4402	1.4023
Group 2 - No Positive Information (Control), N=109			
	V1 (Time0)	V2 (Time1)	V3 (Time2)
Mean	3.8056	3.5926	3.5278
Std. Deviation	1.6375	1.5165	1.5616

LEGEND:

- In both groups, the treatment Ex Ante Positive Information is administered between Time 0 and Time 1.
- V1: Initial Attitudes; V2: Attitudes after Negative Info about Industry Practices; V3: Attitudes after Negative Info about Brand.
- *: Statistically Significant at 5% Level.

Table 6 - The Spillover Effect of *Ex Ante* Positive Information on Attitudes towards a Competing Brand: Parameter Estimates from the Multi-Group LGM

Group 1 - *Ex Ante* Positive Information (Treatment), N=105		
	F1 (Intercept)	F2 (Slope, Up)
Mean (Mi)	3.411*	-0.098
Variance (Di)	2.028*	0.924
Group 2 - No Positive Information (Control), N=109		
	F1 (Intercept)	F2 (Slope, Up)
Mean (Mi)	3.702*	-0.485*
Variance (Di)	2.028*	0.924
Uni-Variate LM Test: Three Equality Constraints between Groups should be Released		

LEGEND:

- F1 has loadings l11=1, l12=1 and l13=1; F2 has loadings l21=0, l22=0.20 and l23=0.40.
- *: Statistically Significant at 5% Level.