ORGANIZATIONAL JUSTICE
AND VOLUNTARY LABELLING OF GENETICALLY ENGINEERED FOOD.
DOES JUSTICE SELL?

By

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ABSTRACT

ORGANIZATIONAL JUSTICE AND VOLUNTARY LABELLING OF GENETICALLY
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The study draws on existing marketing and organizational justice research to examine the underlying mechanisms by which justice perceptions may influence consumers' purchasing decisions of genetically engineered (GE) food. Using an online between subject experiment whereby the four social-psychological dimensions of justice were used to depict GE voluntary labelling initiative, I explored the differential effect of justice dimensions on affective reactions, perceived risks and perceived benefits of GE food, evaluation of company's reputation, and purchasing intentions. Latent multi-group structural equation models were used to analyze data collected from a sample of 1,074 participants who were randomly assigned to five conditions. There were three main findings. First, labels that emphasized fair process led to relatively positive affective reactions compared to labels that did not address justice or only addressed distributive (outcome) justice. Second and third, positive affective reactions had direct and indirect relationships with purchase intentions through perceived benefits and perceived reputation for fair process. Implications are discussed.

This thesis is dedicated to the spirit of my mother
who always thought that the best thing that a girl can get is a good education, not a diamond.

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**INTRODUCTION**

Genetically engineered (GE) food is a controversial issue among American consumers who question a number of unknowns about the long-term health and environmental effects of GE food. One key area of the controversy is whether GE food should be labelled (Scipioni, 2016). Studies have examined consumers' attitudes towards GE food from different lenses including, but not limited to, risk/benefit perception (e.g., Siegrist, 2000), affective reactions (Townsend & Campbell, 2004), purchase decision (Colson & Huffman, 2011), and trust in authorities that manage the application of GE technology in food production (e.g., Frewer, Scholderer, & Bredahl, 2003). Consumers' affective reactions were found to influence their purchasing decision of GE products. That is, consumers who reported negative emotions toward GE food (e.g., dread and disgust) were unlikely to buy products that included GE ingredients (Townsend & Campbell, 2004). Relatedly, 92% of American consumers indicated that they would prefer labelling of GE food in order to make better informed food choices (The Mellman Group Inc., 2015).

Consumer demand for GE labelling represents 'a national movement', peppered by public protests against food companies that refuse to disclose the ingredients of their products (Stark, 2016). GE labelling proponents posit that if companies are sure of the safety of their GE ingredients, they wouldn't oppose mandatory labelling (Stockman, 2014). Thus, public and consumer organizations advocate for legislation that compels food companies to label products containing GE ingredients.

A major challenge for food companies is to decide how, if at all, they want to address consumers' demands for GE labelling. Challenged by consumers' growing demand for mandatory GE labelling, food companies have lobbied to block any legislation that requires GE

food labelling. For instance, food companies spent $45 million to defeat California Proposition

37, a mandatory GE labelling initiative (Goldenberg, 2012). Furthermore, companies' lobbying

expenditures to avert GE labelling skyrocketed to $101.4 million in 2015 compared to $

47.9 million in 2013 (Coleman, 2016).

Companies' resistance to provide consumers with food-related information might

jeopardize their reputations (Henson & Reardon, 2005). For example, one reason behind

Monsanto's ranking as the fourth most hated company in the US is its continuous attempts to

block mandatory GE labelling laws (Barnett, 2015). Companies' positions about issues of

concern to consumers is fundamental to their reputations. Because reputation implies consumers'

"ability to recognize and correctly interpret what a firm stands for" (Walsh, Mitchell, Jackson, &

Beatty, 2009, p. 189), companies that fight against GE labelling are irresponsive to consumers'

needs and show a lack of transparency that can negatively affect their reputation. Furthermore,

studies have shown that company reputation involves consumers' perceptions about whether a

company is fair to its consumers. In this regard, consumer perceived justice reflects the extent to

which a company behaves fairly towards its consumers and their families, treats them with

respect, communicates openly with them, and provides them with high quality products (Page &

Fearn, 2005).

Marketing research shows that food labels can serve as a transparency platform, enabling

companies to provide consumers with information about products' characteristics, including

ingredients and methods of production. Through labelling, companies not only comply with

consumers' demands for transparency, but also emphasize their ethical positions towards social

and environmental issues that concern their consumers. For instance, some companies

use organic, eco label, and fair trade to highlight their commitment to environmental

sustainability and social justice practices. Providing this information on food labels enables companies to communicate their ethical behaviors, thereby potentially boosting their reputation as transparent, ethical entities (Loureiro & Lotade, 2005).

Organizational justice research examines companies' behaviors by focusing on four dimensions of justice, namely: distributive justice (i.e., fair distribution of outcomes), procedural justice (i.e., use of policies and procedures to reach an outcome), interactional justice (i.e., respectful treatment of consumers during the enactment of outcomes), and informational justice (i.e., provision of accurate and timely information about outcomes) (Greenberg, 2007). These dimensions were found to influence people's cognition, affect, and behavior towards organizations. For example, perceptions of procedural justice influence support for authorities (Van den Bos, Wilke, & Lind, 1998), compliance with authorities (Lind & Tyler, 1988), and behaviors within organizations (e.g., helping coworkers) (Barclay & Kiefer, 2014). Therefore, these dimensions are thought to cultivate "a corporate image of justice" that can boost a company's reputation (Geenberg, 1998, p.157).

In the context of GE labelling, one example of unprecedented company behavior is the initiative of five food companies to voluntarily label their GE products (Scipioni, 2016). For instance, Campbell's soup attributes its pro-labelling initiative to consumers' growing demands to label foods that contain GE ingredients (Campbell Team, 2016). Similarly, Kellogg's emphasizes that its pro-labelling initiative aims to support consumers' right-to-know what they consume (Kellogg's, 2016). As part of the pro-labelling initiative, participating companies have

created new content on their websites to provide consumers with detailed information about GE ingredients in their products (e.g., http://www.whatsinmyfood.com/, http://www.openforbreakfast.com/en_US/home.html).

While previous studies have examined consumer preference for GE labelling (Hemphill & Banerjee, 2015; Vecchione, Feldman, & Wunderlich, 2015) and consumers' attitudes towards companies that oppose GE labelling (Schurman & Munro, 2009), little is known about consumers' cognitive, affective, and behavioral responses towards companies that voluntarily label GE products. It is therefore important to fill this gap by integrating two distinct bodies of literature from the marketing and organizational justice fields, to investigate the effect of GE voluntary labelling initiatives on consumers' affective reactions towards companies, risk/benefit perceptions of the application of GE in food production, evaluation of company reputation, and purchase decision of GE labelled products.

This study includes an online experiment, whereby the four social-psychological dimensions of justice are used to depict GE voluntary labelling initiatives. Four models that are based on the justice dimensions will be examined to better understand consumers' purchasing decisions of GE food. Specifically, this analysis will explore the underlying mechanisms by which justice perceptions influence consumers' purchasing decision of GE products. Each model will explore the relationship between justice perceptions, affective reactions, perceived risk and perceived benefit of GE, evaluation of company's reputation, and purchasing decision using structural equation modelling. In other words, the differential effect of the four justice models will be compared to identify the justice dimension that underpins consumer purchase decision of GE labelled products. Conceptual model is presented in Figure 1.

Figure 1. Conceptual model
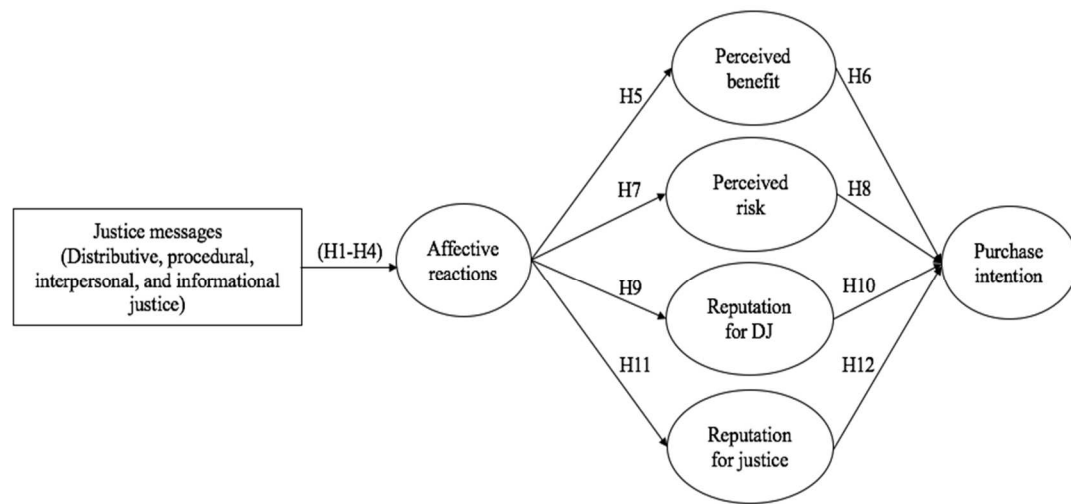


Note. DJ= Distributive justice

This study draws on existing marketing and organizational justice research to provide four distinct contributions to organizational justice and marketing literatures. First, the marketing field had not incorporated justice research to date. However, this analysis will argue that its use would help companies label their products, thereby communicating product-related information to consumers. Drawing on Besley & McComas's proposition (2005, 2014) that justice literature can inform framing research, this study adapts the dimensions of organizational justice to frame companies' decisions about GE labelling.

Second, this study responds to scholarly calls (Greenberg, 2009) for an examination of organizational justice in a new area, namely company reputation. Although having a good reputation plays a significant role in determining the competitiveness of a company in the market (Hall, 1993), there is a paucity of research that has examined the relationship between organizational justice and reputation.

Therefore, this study helps fill this gap by investigating the effects of organizational justice dimensions on company reputation. By better understanding the effects of organizational

justice dimensions, companies can become better informed in areas such as reputation-building communications and future strategic communications with consumers.

Third, most previous research on organizational justice has focused on internal stakeholders' attitudes and behaviors (i.e., employees, managers) (e.g., Lind, 2001; Greenberg, 2007; Sweeney & McFarlin, 1993; Weiss & Cropanzano, 1996). In contrast, scant studies exist on the impact of justice on external stakeholders (i.e., consumers). Given that consumer purchase behavior is a major source of companies' revenues, it is important to examine the effect of companies' decisions to label GE food on consumer purchase decision. While it is worthwhile for food companies to provide information about GE products, it is important to investigate consumers' reactions in terms of purchasing behavior. Importantly, previous studies have examined the effect of justice dimensions on consumers' evaluation of complaint handling (Blodgett, Hill, & Tax, 1997; Clemmer & Schneider, 1996; Goodwin & Ross, 1992), and consumer satisfaction with services in hotels/restaurants (Martinez-Tur et al., 2006). However, prior studies have not examined the justice dimensions, in the context of consumers' purchase decision of GE food. This study aims to investigate the direction and strength of the relationship between justice dimensions that portray a justice event (i.e., GE voluntary labelling initiative) and consumer purchase behavior.

Fourth, organizational justice studies have researched negative emotions as a consequence of a violation of justice, but only a few have examined positive emotions in the context of justice events.

This study contributes to the relatively few studies that have examined positive (e.g., De Cremer, Stinglhamber, & Eisenberger, 2005; Barclay & Kiefer, 2014) rather than negative emotions (e.g., Barclay, Skarlicki, & Pugh, 2005; Barky & Kaplan 2007), as outcomes of justice

events by examining the differential effect of justice dimensions (distributive, procedural, interactional, and informational) on consumers' affective reactions. A particular emphasis is placed on the role of affective reactions on consumers' risk/benefit perceptions, evaluation of company reputation, and subsequent purchase decision. This study therefore extends research on the role of affect in risk communication by providing a richer account of the relationship between justice and consumers' affective reactions in the context of GE food.

Using organizational justice literature to situate the constructs under investigation, this study is organized into four chapters. In the first chapter, I discuss why justice matters by laying out the theoretical basis, development, and conceptualization of justice dimensions. This is followed by reviewing the relationship between justice and affect. I then focus on company reputation, with a special emphasis on the relationship between reputation and organizational justice. In the second chapter, I detail the methods and measures. The third chapter describes the data, data analysis, and discussion of findings. In the fourth chapter, I summarize the contributions, implications, and limitations of the study, in addition to suggestions for future research.

# CHAPTER ONE: LITERATURE REVIEW

**Justice in Organizational Settings**

Perceptions of justice, or justice (used synonymously with "justice" in the literature and in the current research) are extensively examined in organizational settings, whereby authorities enact (un)fair procedures/outcomes that influence people's attitudes and behaviors. In this regard, justice perceptions reflect an evaluation of processes and outcomes to determine whether outcomes are fairly distributed, fair procedures are used to reach outcomes, implementation of outcomes are based on respect, and whether timely, accurate information is provided (Cohen-Charash & Spector, 2001; Colquitt, Greenberg, & Zapata-Phelan, 2005).

The term 'organizational justice' reflects the degree to which individuals perceive events/decisions implemented by organizations as fair (Greenberg, 1987). Given this definition, the notion of justice may imply conscious efforts by companies to create an image of justice among the public. As Cahn (1949) argued, justice is "not a state, but a process; not a condition, but an action. 'Justice', as we shall use the term, means the active process of remedying or preventing that which would arouse the sense of injustice" (p. 13).

Perceptions of justice can be inferred from the distributive, procedural, interactional, and informational aspects of the decision making process. That is, people's perceived justice is based on the four dimensions of justice namely, (a) distributive justice (i.e., whether outcomes are allocated fairly based on equity or equality); (b) procedural justice (i.e., they have a voice in the decision making process); (c) interpersonal justice (i.e., authorities are trustworthy and respectful of people's opinions; and (d) informational justice (i.e., whether authorities provide them with accurate and honest explanations) (Cohen-Charash & Spector, 2001).

Studies have shown the differential predictive power of each justice dimension (e.g., Colquitt, 2001). For example, prior research found that informational justice was strongly related to trust and evaluation of authority and moderately related to outcome satisfaction, whereas interpersonal justice was strongly related to supervisor evaluation and weakly related to outcome satisfaction (Colquitt, 2001b). By the same token, Clemmer and Schneider (1996) found that distributive justice was the main predictor of customer satisfaction, followed by procedural justice and interactional justice, in the context of four types services (e.g., banks, physicians, fast-food, and restaurants). Conversely, Martinez-Tur, Peiro, Ramos, & Moliner (2006) found that distributive justice was the most important determinant of customer satisfaction, followed by interactional justice and, finally, by procedural justice.

Previous research on organizational justice has focused on the context of workplaces and involve the relationship between employees and managers. However, contemporary organizational research has focused on applying organizational justice dimensions in fields such as public engagement (Besley, 2010; Besley, Kramer, Yao, & Toruney, 2008), and science and risk communication (Besley, 2009; 2012). Overall, prior research has found that justice perceptions influence employees' attitudes and behaviors about organizations' outcomes and practices (McFarlin & Sweeney, 1992). For instance, when employees think they are treated fairly, they are more likely to be satisfied with their jobs and committed to their organizations (McFarlin & Sweeney, 1992). Furthermore, when treated fairly, employees tend to favorably evaluate their organizations (Goodwin & Ross, 1992; Lind & Tyler, 1988), and develop positive emotions towards them (Barclay & Kiefer, 2014).

The underlying motives for people's attention to justice can be explained using three theoretical models, namely the instrumental, relational, and denotic models. The instrumental

model posits that people care about justice to ensure they have control over desired outcomes and thus increase their potential economic benefits (Thibaut & Walker, 1975). In addition to tangible economic outcomes, people's interest in justice can be justified as a desire for psychological control given that justice can be a mean to protect one' self-interest by ensuring fair distribution of tangible outcomes in the short and long term (Byrne & Cropanzano, 2001).

The relational model holds that justice is best defined as 'symbols of group values' that enhances people's sense of belonging to social groups through the fostering of feelings of self-worth and acceptance (Tyler & Lind, 1992, p. 140). Thus, justice ensures the allocation of psychological outcomes, such as pride and respect. As Tyler explained:

> People do not have to get favorable outcomes, or feel they have control over decisions, before they will comply with group rules or do things on behalf of the group. Instead, relationally fair treatment can promote feelings of pride and respect that in turn encourage group-serving behavior (Tyler & Degoey,1996, p. 925).

Lastly, the denotic model posits that justice is an end to itself that improves the quality of people's lives (Cropanzano, Goldman, & Folger, 2003). Unlike the instrumental and relational models, the denotic model emphasizes justice as a moral principle derived from ethical standards (Folger & Skarlicki, 2008). In this regard, justice ensures that people are treated "as they should or deserve to be treated by adhering to standards of right and wrong" (Cropanzano et al., 2003, p.1019). Given the denotic model's definition, people attend to justice as a 'social organizing principle' rather than a means to pursue economic interests or group identity (Van den Bos & Lind, 2002, p. 38).

In general, these theoretical models of justice suggest that people attend to justice for its favorable outcomes at the individual and collective levels ☐ whether these outcomes are related to tangible self-interests, intangible psychological needs, or moral standards.

Another reason that increases people's interest in justice is uncertainty. See (2000) showed that people use justice when they have insufficient knowledge about life events or issues of concern, such as public policies. See's experiment (2000) showed that individuals who had a low level of knowledge about an environmental regulation policy used justice information about the policy-making agency to decide whether to accept the policy. In contrast, individuals with a high level of knowledge about the environmental policy were not influenced by justice information. By the same token, justice influences people's uncertainty about companies' practices and policies. For instance, the use of fair procedures has been found to decrease uncertainty about company's decisions to use new information systems (Eddy, Stone, & Stone-Romero, 1999).

Furthermore, studies have shown that when people lack information about what others have received (i.e., an outcome reference point), they seek other information to judge whether their own outcome was fair. According to the justice heuristic theory's substitutability proposition, people use justice information as a heuristic substitute, not only to judge their own outcome when they lack an outcome reference point, but also to judge whether an outcome is better or worse compared to what they expected (Van den Bos & Lind, 2002).

Of great relevance to this research is two justice theories that can aptly explain why people are attentive to justice in their interactions with authorities. The justice heuristic theory and its successor ☐the uncertainty management theory (Van den Bos, Wilke, & Lind, 1998; Van den Bos & Miedema, 2000) posit that people use justice-relevant information as 'heuristics' or

'cognitive shortcuts' to form justice judgments that influence their subsequent understanding and reactions to different situations (Lind, 2001, p. 56). According to the justice heuristic theory, justice serves as a heuristic substitute for trust judgments when people deal with authorities, because ceding to authority may put them at risk of being exploited (Lind, 2001). Therefore, people dealing with authorities seek information to decide whether they can trust the authorities not to exploit them. When this information is unavailable, individuals will search for justice-relevant information (e.g., whether authority uses fair procedures to reach a decision) to decide whether an authority is trustworthy.

The uncertainty management theory extends the proposition of justice as 'heuristic' by suggesting that people attend to justice, not only when they assess the trustworthiness of an authority, but also in different situations that arise in their lives. As such, people are attentive to justice-related information when either positive or negative changes occur (Van den Bos & Lind, 2002). In this context, justice helps people to judge outcomes, which in turn, influences their behaviors. For example, irrespective of a company's labelling decision (for or against), prior research has found that consumers were more likely to accept and support a company's decision if they were provided information about whether the company used fair procedures to reach its labelling decision (Dixon, McComas, Besley, & Steindhart, 2016).

In light of the justice heuristic and uncertainty management theories, Lind (2001) suggested that "fair treatment can be as much a management heuristic as a compliance heuristic" (p.83). That is, authorities use fair treatment to generate positive responses, which can lead people who receive this fair treatment to view authorities as 'fair' and become more inclined to comply with authorities' demands. Notably, many organizational justice studies use the term 'authorities' as referring to 'justice agents', or those who are the source of (in)justice through

decisions or outcomes that trigger people's justice judgments (Fortin, Blader, Wisenfeld, & Wheeler–smith, p. 419). Hence, justice agents include supervisors, top management, or managers who may cause (in)justice or redress injustice when it happens. Recent research extends the use of the term 'justice agents/authorities' to include local scientists (Besley, McComas, & Waks, 2006), health authorities (Besley, McComas, & Trumbo, 2008), and political leaders (Besley & McComas, 2007).

Drawing on the theories of justice heuristic and uncertainty management, I use distributive, procedural, interactional, and informational justice dimensions to develop messages (i.e., justice-based messages) that will be displayed on cereal packages to depict a justice event $\square$ that is a GE voluntary labelling initiative. For the purpose of this research, authority refers to food companies that agree to voluntarily label GE products. I hypothesize that justice-based messages will influence consumers' affective reactions, risk and benefit perceptions of the application of GE in food production, evaluation of company reputation, and purchase decision of GE products.

**Justice: Development, Conceptualization, and Measurements**

This section reviews the development of justice dimensions while discussing their conceptualizations, differences, and measurements.

**Distributive justice.** Initially, the notion of justice focused primarily on the fair allocation of outcomes, termed distributive justice. Using the equity rule, Adams (1965) defined distributive justice as the allocation of outcomes based on the ratio of an individual' inputs compared to others' inputs. In this regard, perceived distributive justice denotes whether an individual receives equitable outcomes compared to a social referent standard. According to the

equity rule, social comparison information determines the evaluation of outcomes, as individuals compare their outcomes relative to the outcomes of others (Adams, 1965).

Leventhal (1976) and Deutsch (1975) extended the conceptualization of distributive justice using two rules: (a) the equality rule that defines justice in terms of the equal distribution of outcomes, and (b) the need rule that frames distributive justice as the allocation of resources to satisfy individuals' needs. An outcome is considered fair if the allocation rule serves the realization of favorable goals (e.g., productivity, welfare). Distributive justice therefore refers to the principles that people use to distribute rights/duties and ensure proper distribution of benefits and burdens (Rawls, 1971). Distributive justice, as the first dimension of justice, focuses on whether outcomes are equitable or needed.

Distributive justice fosters people' sense of control because justice ensures that they will get the outcomes to which they are entitled (Reis, 1988). Distributive justice is an outcome-focused dimension that helps individuals to assess the fair allocation of benefits. Distributive justice refers to the extent to which an outcome conforms to a normative standard, such as a merit (Lerner, 1974) or a referent standard, such as what others received (Kulik & Ambrose, 1992).

Research has conceptualized and operationalized distributive justice differently. Some scholars (e.g., Skitka, Winquist, & Hutchinson, 2003) have conceptualized distributive justice as outcome favorability, denoting whether outcomes are positive/negative or favorable/unfavorable. Others (e.g., Besley et al., 2006) have suggested that the distribution of risks and benefits could substitute for the distribution of financial outcomes. Thus, distributive justice can be conceptualized as the fair sharing of benefits and risks.

In the context of GE food, the conceptualization of distributive justice was based on the premise that consumers' opposition to GE food is not related to perceived risk, but to the lack of benefits associated with GE applications (Batista & Oliveira, 2009). As a result, scholars have conceptualized distributive justice as the fair distribution of risks and benefits, reflective of whether risks and benefits are fairly allocated and who is responsible for such allocation (McComas et al. 2014; Besley et al., 2006). For example, McComas and colleagues (2014) measured distributive justice by assessing the extent to which big companies and farmers benefit from the application of GE and whether the public faced an unfair amount of risk from the application of GE.

Based on these studies, this research uses distributive justice to portray GE voluntary labelling as an initiative, whereby companies share the benefits of using GE in food production with consumers (Model 1).

**Procedural justice.** In the 1980s, the conceptualization of justice focused on the use of fair procedures, rather than the fair distribution of outcomes. Therefore, procedural justice, as the second dimension of justice, centers on whether a fair, unbiased process that grants people "voice" or "choice" in decision-making is used to reach outcomes (Lind & Tyler, 1988). Procedural justice underlies the structural aspects of the decision-making process by giving people the opportunity to participate in decisions, and ensuring neutrality and the application of rules (Greenberg, Bies, & Eskew, 1991). Procedural justice can be defined as the perceived justice of the means by which the ends are achieved (Goodwin & Ross, 1989).

Fair procedures, as a means to reach fair outcomes, need to be consistent, provide opportunities for correction (i.e., appeals to redress errors/complaints), free of bias and impartiality, representative of all concerned parties, and grounded on accurate information and

ethical standards (Leventhal, Karuza, & Fry, 1980). Based on these characteristics, procedural justice influences people's reactions towards outcomes. To illustrate, people might accept negative outcomes if an authority uses fair procedures to reach them □ a process termed as "the fair process effect" (Folger, Rosenfield, Grove, & Corkran, 1979). For example, Schaubroeck, May, and Brown (1994) showed that an organization's decision to freeze employees' payments (i.e., unfavorable outcome) did not influence employees' commitment to the organization as they were informed about the fair procedures used to reach this decision. Conversely, employees who did not get an explanation showed less commitment towards the organization because they viewed the pay freeze decision as procedurally unfair.

The fair process effect therefore highlights that procedures often matter more than the fair distribution of outcomes. In support of this proposition, Walker and colleagues (1979) explained that "at least with respect to perceptions, 'ends' (distributive justice) cannot justify 'means' (procedural justice)" (p. 1416). Similarly, Lind and Tyler (1988) suggested that justice judgments are primarily formed based on fair procedures used to arrive at outcomes rather than the fair allocation of outcomes. Conversely, drawing on the value protection model (VPM), Skitka (2002) suggested that procedural justice would matter less to those who have a moral mandate. As such, people with moral mandate about an outcome will care less about fair procedures because they aspire to reach the desired mandate end, irrespective of whether procedures are fair.

Other scholars have contended that the order used to convey information about justice (e.g., distributive or procedural justice) influences people's formation of justice perceptions. As such, the information that is presented first influences people's justice judgments compared to the information that is presented later (Van den Bos, Vermunt, & Wilke, 1997). Others have

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shown that the type of outcome determines whether procedural justice or distributive justice shapes people's justice perceptions. Specifically, McFarlin and Sweeney (1996) and Sweeney and McFarlin (1993) showed that people use procedural justice to assess outcomes related to a system or trust in authority, or the so-called "system or authority referenced outcomes." Conversely, people focused on distributive justice to assess personal outcomes, such as pay and job satisfaction, or the so-called "person-referenced outcomes."

Drawing on these studies, this research uses procedural justice to portray GE voluntary labelling initiative as a result of listening and responding to consumers' demands to label GE products (Model 2).

**Interpersonal justice.** In the late 1980s, Bies and Moag (1986) introduced interpersonal justice as the third dimension of justice, independent from procedural justice. They contended that interpersonal justice focuses on the quality of interpersonal treatment that individuals get during their interactions with authorities. Unlike procedural justice that focuses on the structural aspects of procedures, interactional justice captures how such procedures are implemented. Interactional justice therefore refers to the perceived justice of interpersonal treatment that individuals receive while interacting with authorities (Bies & Moag, 1986).

Truth and human dignity are two core concepts underlying interpersonal justice. Truth reflects sincerity and truthfulness, whereas human dignity refers to respect, considerate actions, civility, and prevention of physical or psychological personal danger (Bies, 2015). Thus, violations of these concepts through lying, deception, disrespect, inconsiderate actions, or exposing others to danger represent forms of interpersonal injustice (Bies, 2015). In terms of human dignity, one sign of respect is the provision of timely feedback because people feel unfairly treated if they have to wait to receive a response (Bies, 2015).

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The importance of interpersonal justice stems from social exchange theories that posit that people not only care about the economic value of outcomes, but also the socioemotional value of outcomes (Cropanzano, Stein, & Nadisic, 2001). That is, socioemotional value is an important aspect of human interaction, emphasizing respect, dignity, and politeness. In this respect, interactional justice reflects the quality of the relationship between authorities and individuals by examining whether individuals are treated with courtesy and respect (Bies & Moag, 1986) and politeness, friendliness, sensitivity, interest, and honesty (Clemmer, 1993).

While some scholars consider interpersonal justice as a dimension of procedural justice (e.g., Cropanzano & Randall, 1993; Skarlicki & Latham, 1997; Tyler & Lind, 1992), others advocate for splitting the two constructs (e.g., Bies, 2001; Cohen-Charash & Spector, 2001; Cropanzano, Prehar, & Chen, 2002). For instance, a meta-analysis study conducted by Cohen-Charash & Spector (2001) concluded that the two constructs are highly correlated, yet should be separated into two independent dimensions. In support of this proposition, Colquitt and colleagues (2001) showed that interpersonal and procedural justice predict different outcomes, and therefore they should be used as distinct constructs. For example, interactional justice predicted supervisor evaluation, whereas procedural justice predicted rule compliance. Other scholars have also found empirical evidence of the independence of procedural and interactional justice. For example, Rupp & Cropanzano (2002) found that interpersonal justice predicted job performance but procedural justice did not. Similarly, Ambrose and colleagues (2002) demonstrated that interactional justice predicted employees' sabotage of the workplace, as opposed to procedural justice.

Although interpersonal justice is not concerned with the procedures used to reach decisions, it emphasizes authority's conduct in communicating and implementing such decisions.

Research shows that interpersonal justice influences individuals' reactions to authorities. For example, consumers were more likely to boycott a retailer and warn their friends about shopping there when they were treated rudely, irrespective of the full compensation they were provided. Conversely, consumers were more likely to patronize a store again, and less likely to engage in negative word-of-mouth, when they were treated with courtesy and respect and only received a partial compensation (Blodgett et al.,1997).

Based on the literature, this research uses interpersonal justice to portray GE voluntary labelling initiative as a considerate action, whereby companies treat consumers with respect and integrity (Model 3).

**Informational justice.** By the end of the 1990s, informational justice emerged as the fourth dimension of justice (Colquitt et al., 2005) as a result of Greenberg's suggestion (1993) to split interpersonal justice into informational justice and interpersonal justice. Greenberg contended that informational justice refers to whether authorities communicate clearly and openly, and provide accurate explanations about the outcomes. In contrast, interpersonal justice refers to whether authorities treat individuals with politeness, respect, and dignity (Greenberg, 1993). Consistent with Greenberg's suggestion, two studies by Colquitt (2001) and Colquitt & Rodell (2011) showed that justice has four dimensions, namely, distributive, procedural, interpersonal, and informational. Additionally, prior research has used the dimensions of justice as distinct constructs in risk related issues (e.g., Besely, 2010; McComas & Besley, 2011).

Bies and Moag (1986) contended that justification and trustfulness foster justice perceptions through their depiction of authorities' efforts to share rational, accurate, and timely explanation of outcomes. In this context, this research uses informational justice to portray a GE

voluntary labelling initiative as an effort, whereby companies provide accurate and clear information about GE products (Model 4).

**Relationship Between Affect and Justice Perceptions**

The role of emotions in guiding consumers' evaluation and subsequent behaviors has received a substantial amount of attention in many disciplines, such as food marketing (Geuens, De Pelsmacker, & Faseur, 2011), organizational justice (Barsky & Kaplan, 2007; Mullen, 2013), and risk communication (Besley, 2012; Finucane, Alhakami, Slovic, & Johnson, 2000; Townsend & Campbell, 2004). Studies suggest that people's affective (emotional) reactions occur relatively quickly with little conscious cognitive processing (Lazarus, 1991). That is, people use their emotions to assess an object/situation with less analytic processing by asking themselves "how do I feel about this issue/object?" (Schwarz, 1990, p. 529). Furthermore, the affect-as-information framework and the primacy affect hypothesis suggest that individuals' affective evaluation precedes cognitive rationalization (Pham, Cohen, Pracejus, & Hughes, 2001).

Before proceeding with a further review of the literature, it is important to note that little consensus exists about the definitional boundaries between feelings, emotions, and affect (Forgas, 1992; Frijda, 1988; Wiles & Cornwell, 1991). Marketing and organizational behavior researchers have concluded that these terms seem to be used interchangeably (see Eisenberg, 2000; Izard, 1993; Lazarus, 1991; Lazarus & Cohen-Charash, 2001). For the purpose of this research, affective reactions will refer to emotions that are "more intense, short-lived, and have a definite cause and clear cognitive content" (Forgas, 1992, p. 230). Moreover, emotions are related to specific stimulus such as an event, incident, condition, person, or object (Bagozzi, Gopinath, & Nyer, 1999). Relatedly, some studies (e.g., Batra & Ray, 1986) have suggested that

the term 'affect' includes feelings, emotions, and moods. Second, various lines of research provide convergent, overlapped definitions of affect and emotions by considering integral affect as specific, discrete emotions (e.g., joy, anger) that are elicited in response to an object or referent (Forgas, 2000; Frijda, 1986; Lerner, Han, & Keltner, 2007). In this study, the terms affect and emotions are interchangeably used.

The role of emotions in appraisal and decision making can be explained using appraisal theories of emotions. The fields of marketing, consumer behavior, and organizational science have focused on the appraisal theories of emotions at length. These theories focus on people's emotional reactions, with special emphasis on the role of cognitive processes in evoking emotions (Bagozzi et al., 1999; Lazarus, 1991; Scherer, 2001). As put by Bagozzi et al. (1999) "emotions arise in response to appraisals one makes for something of relevance to one's wellbeing" (p.185).

Appraisal thus refers to evaluative judgments and interpretation of a specific event/target object (Bagozzi, 1999; Forgas, 2000). Furthermore, appraisals can be based on "deliberative, purposive, and conscious, but also unreflective, automatic, unconscious, depending on the person and eliciting conditions for emotional arousal" (Bagozzi et al., 1999, p.185).

Appraisal theorists (e.g., Lazarus, 1991) contend that emotions occur based on assessing the valence of the event (positive/negative) and its relevance to individuals' concerns/well-being. As such, the emotion elicitation process occurs as a result of an evaluation of the event. Put differently, the cognitively-based evaluation of events leads to emotions, not the event itself (Roseman et al., 1990). In the context of organizational studies, Barsky and colleagues (2011) drew on the appraisal theories of emotion, suggesting that the appraisal process can occur simultaneously and result in a "very emotionally infused perception of justice" (p. 253).

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Closely related to the appraisal theories of emotion is the Appraisal Tendency Framework (ATF) which posits that integral emotions are not only caused by cognition, but evoke cognitive appraisals in concurrence with the central appraisal pattern of emotions. As such, specific emotions evoke specific cognitive and motivational processes that influence people's judgments and decision making (Lerner & Keltner, 2000; 2001). For example, feeling fear or regret may influence one's willingness to gamble (Loewenstein & Lerner, 2003); feeling anxious is associated with an appraisal of threat and triggers actions to reduce uncertainty (Lazarus, 1991); and sadness is associated with appraisal of loss (Lazarus, 1991), which may lead to reward-seeking actions to change the loss (Lerner et al., 2004). Drawing on ATF, Weiss and Cropanzano (1996) posited that emotions influence behavior directly (affect-driven behavior) or indirectly (appraisal-driven actions). Similarly, Lerner and colleagues contended that emotions elicit specific cognitive appraisals that form 'an implicit lens for interpreting subsequent situations" (p.337).

In earlier organizational justice research, the role of emotions in decision making was "underemphasized and underappreciated" (Bies & Tripp, 2001, p. 205). Recent research, however, acknowledges that people's reactions to justice events are not mere "cold cognitive", but "emotion laden", reactions (Barsky & Kaplan, 2007, p. 286). In other words, emotions and justice are closely intertwined to the extent that emotions influence and are influenced by justice judgments. Following this logic, some studies have examined emotions as a consequence of people's perceptions of justice (e.g., Krehbiel & Cropanzano, 2000), while others have focused on emotions as antecedents/causes that influence people's perceptions of justice (e.g., Mullen, 2013).

It is important to note, however, that the bulk of organizational justice research has primarily examined the effect of injustice events (e.g., unfair procedures) on eliciting negative emotions, and influencing people's subsequent behaviors (Cohen-Charash & Byrne, 2008). For instance, violations of justice (e.g., interactional justice) evoked anger, which in turn mediated the relationship between outcome favorability and interactional justice, and increased people's desire to perform retaliatory behaviors (Barclay et al., 2005). By the same token, unfavorable outcomes were associated with frustration and anger, whereas guilt and anxiety were associated with unfair procedures (Krehbiel & Cropanzano, 2000).

**Importance of positive affect.** Research has shown that positive emotions increase tendencies to accept new information and explore new experiences (Fredrickson, 1998). In the context of organizational justice, some recent work has focused on positive emotions as consequences of justice (Barclay & Kiefer, 2014; Barsky et al., 2011). For example, Barclay & Kiefer (2014) showed that justice was positively related to positive emotions (e.g., happiness, pride, and optimism). Furthermore, positive emotions mediated the relationship between justice perceptions and positive behaviors (e.g., helping coworkers). Similarly, Krehbiel and Cropanzano (2000) showed that positive emotions (e.g., happiness, pride, contentment) were associated with favorable outcomes. Overall, studies have shown that emotional reactions (positive or negative) are linked to perceptions of (un)justice.

Scholars' attention to positive emotions may stem from the differential effects of negative and positive emotions on human behaviors (Fredrickson, 1998). In this regard, negative emotions suggest a discontinuity/avoidance of a behavior, whereas positive emotions predict an approach behavior. For example, outrage led to boycott of a company's products (Lindenmeier, Schleer, & Pricl, 2012), and anger and frustration were associated with distrust in organizations (Kiefer,

2005). Conversely, consumer satisfaction was associated with consumer loyalty towards the company (Yu & Dean, 2001), and consumer gratitude was associated with buying a company's products and using blogs to praise the company (Romani, Grappi, & Bagozzi, 2013).

In accordance with previous studies that have shown the positive relationship between justice perceptions and positive emotions, I posit the following hypotheses:

**H1:** The message that emphasizes GE labelling using distributive justice will be associated with higher positive affective reactions compared to the label that does not include justice information (Model 1- Distributive justice message).

**H2:** The message that emphasizes GE labelling using procedural justice, followed by the benefits of GE, will be associated with higher positive affective reactions than the message that includes only distributive justice information, and the message that does not include justice-related information (Model 2: Procedural and distributive justice message).

**H3:** The message that emphasizes GE labelling using interpersonal justice, followed by the benefits of GE will be associated with higher positive affective reactions than the message that includes only distributive justice information, and the message that does not include justice information (Model 3 – Interpersonal and distributive justice message).

**H4:** The message that emphasizes GE labelling using informational justice, followed by the benefits of GE, will be associated with higher positive affective reactions than the message that includes only the distributive justice message, and the message that does not include justice information (Model 4 - Informational and distributive justice message).

**Relationship between affect, risk/benefit perceptions, and purchase intention.**

The risk literature emphasizes the role of affect in shaping consumers' judgments and behavior

towards risk-related issues such as nuclear power, pesticides, food radiation, water fluoridation, and food preservatives (Finucane et al., 2000). Risk researchers define affect as a "heuristic cue", "mental shortcut" (Finucane et al., 2000, p.3) or "readily available affective impression" (Slovic, Fischhoff, & Lichtenstein, 2005, p.314) that guide people's decision-making. The affect heuristic model and risk-as-feeling hypothesis emphasize the role of emotions in judgments and decision making. Specifically, the affect heuristic model suggests that people rely on their positive or negative affect in making decisions and judgments. As such, people's affective assessment depends on the extent to which they feel positively or negatively toward an event/object and whether they like/dislike it. Besides positive and negative affect, specific feelings can also influence people's judgments. According to the risk-as-feeling hypothesis, feelings such as worry, fear, dread, and anxiety can guide people's decisions. In the context of GE food, researchers examined specific emotions such as worry (Townsend & Campbell, 2004), anger (Stewart & McLean, 2005), fear (Laros & Steenkamp, 2004), and dread and disgust (Townsend & Campbell, 2004).

Studies have shown that affect, whether it is a valenced affect (positive/negative) or a discrete emotion (specific emotion), influences people's risk-related decisions. For example, Alhakami and Solvic (1994) found that affect is a predictor of perceived risk and benefits. That is, those who feel favorably towards an activity (e.g., nuclear power) will assess it as low in risk and high in benefits. By the same token, Finucane and colleagues (2000) found that providing people with positive information influenced their affect, and thus influenced their perceived risk and benefits. As such, participants who read a vignette about the risk of technologies (e.g., food irradiation) had a negative affect towards these technologies, and thus evaluated them as high in risk and low in benefit. Conversely, those who read a vignette about the benefits of technologies

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had positive affect towards these technologies and evaluated them as high in benefits and low in risk.

In accordance with the previous studies, I hypothesize that:

**H5:** Positive affective reactions will be positively associated with perceived benefit

**H6:** Perceived benefit will be associated with purchase intention

**H7:** Positive affective reactions will be negatively associated with perceived risk

Another line of research has examined the effect of consumer perceived risk on the purchase decision of GE food using different methodologies, such as experimental auctions (Colson, Huffman, & Rousu, 2011; Noussair, Robin, & Ruffieux, 2002;), taste test experiments (Townsend & Campbell, 2004), in-person interviews and surveys (Bredahl, 2001; Magnusson, & Hursti, 2002), or online experiments (McComas et al., 2014). Some studies have shown that perceived benefits of GE food (e.g., enhanced nutritional value) may increase consumer willingness to buy (Colson & Huffman, 2011; Heiman, Agmon, Fleisher, & Zilberman, 2011). Other studies have shown that consumers are more likely to pay a premium to avoid GE food (Lusk & Coble, 2005).

Another factor that influences purchase decision of GE food is consumers' attitudes towards the application of GE technology in food production, which are determined by perceived risks and benefits of GE (Bredahl, 2001). In two studies, Siegrist showed the causal relationship between perceived risk and consumers' acceptance of GE food (Siegrist, 2000; 1999). While several studies have examined the characteristics of risk (e.g., uncertainty and negative consequences) (Slovic et al., 1985), others have identified different types of risks including social, financial, performance, physical, and psychological risks (Jacoby & Kaplan, 1972). For example, Klerck and Sweeney (2007) tested the relationship between purchase intention of GE

food and three types of risk, namely, psychological risk ((i.e., feeling psychologically uncomfortable), physical risk (e.g., long term health and environment consequences), and performance risk (e.g., bad taste). They found that the psychological risk was the only type of risk that negatively influenced consumers' purchase intention of GE food.

On the basis of the findings of the preceding studies, I propose the following hypothesis:

**H8:** Perceived risk will be negatively associated with purchase intention

**Corporate Reputation: Definition, Conceptualizations, and Measurements**

Corporate reputation is 'arguably the single most valued organizational asset' that can influence a company's success (Gibson, Gonzales, & Castanon, 2006, p.15). Various disciplines emphasize the favorable outcomes of positive reputation (Fombrun & van Riel, 1997). Strategically, positive reputation boosts the 'competitive advantage' of a company against its rivals (Hall, 1993, p. 610) and leads to higher profitability and better financial performance (Roberts & Dowling, 2002). From a marketing perspective, good reputation promotes better evaluation of companies' products/services (Brown, 1995), increases consumer loyalty (Raj, 1985), and positively influences consumer purchase decisions (Yoon, Guffey, & Kijewski, 1993). From an organizational management perspective, reputation reflects companies' identities and cultures by showing how companies implement their activities and communicate with their employees, consumers, and stakeholders (Fombrun, Gardberg, & Sever, 2000). Thus, favorable reputation is a strategic asset that may help companies to succeed in the market.

Organizational justice research emphasizes the importance of justice in creating a favorable reputation. Bies (1987) contended that justice is a desired label that people want to attribute to their behaviors. Thus, managers strive to create a reputation of being fair, which in turn can enhance their managerial power. In other words, a manager with a reputation for justice

is more likely to gain the admiration, trust, and compliance of his subordinates (Messick, Bloom, Boldizer, & Samuelson, 1985). Likewise, a company reputed to have a 'culture of justice' is highly valued by its employees and consumers, which may result in greater market share (Greenberg 1990, p. 29).

**Definition of reputation from companies' perspectives.** Company reputation has various definitions. Fombrun (1996) defined reputation as "a perceptual representation of a company's past actions and future prospects that describe the firm's overall appeal to all its key constituents when compared with other leading rivals" (p.72). Spence (1974) contended that reputation is "the result of a challenging process through which companies communicate their main characteristics to the public. During this process, companies convey their attributes through 'signals' – that are alterable observable attributes" (p. 107). Reputation is the reflection of company's efforts to boost its status in the market (Spence, 1974). In this regard, companies' actions are regarded as antecedents of a favorable reputation (Fombrun & Rindova, 2000). Reputation-building therefore entails an ongoing, dynamic communication, whereby companies emphasize their underlying qualities by sharing information about their values, products, activities, and achievements.

**Definition of reputation from consumers' perspectives.** Consumers form their opinions of a company's reputation indirectly from information that companies share with them, or directly from interacting with the company through its products or services (Yoon et al., 1993). Definitions of reputation therefore focus on consumers' assessment of a company. For instance, Fombrun & Rindova (2000) interpreted reputation as "a collective assessment of a company's ability to provide valued outcomes to a representative group of stakeholders" (p. 243). Walsh and Beatty (2007) conceptualized customer-based reputation as a "customer's

overall evaluation of a firm based on his or her reactions to the firm's goods, services, communication activities, interactions with the firm and/or its representatives or constituencies (such as employees, management, or other customers) and/or known corporate activities" (p.129). Similarly, Roberts and Dowling (2002) defined reputation as "an overall evaluation of the extent to which a firm is substantially good or bad" (p.1078).

Another definition deals with reputation as an 'attitudinal construct' that reflects emotional and cognitive components (Schwaiger, 2004, p.49). In this regard, reputation implies a valuation of companies' attributes using consumers' objective knowledge and subjective emotions. Consumers may rationally evaluate a company by assessing the quality of its products, performance in the market, and contribution to society (Schwaiger, 2004). Consumers may also evaluate a company emotionally by gauging their admiration, respect, and esteem (Dowling, 2004); the extent to which they like the company; or whether they would regret if the company no longer existed in comparison to other companies (Schwaiger, 2004).

According to Berens &Van Riel (2004), literature about company reputation can be summarized into three conceptual streams. The first stream defines reputation in terms of social expectations. Reputation reflects the extent to which companies respond to the expectations of their consumers (Freeman, 1983). Reputation therefore is measured using items related to social expectations along with financial performance. For instance, America's Most Admired Companies (AMAC) Index (Chun, 2005) and the Reputation Quotient Scale (Fombrun et al., 2000) assess company reputation by measuring the social and environmental role of companies, in addition to the quality of companies' products/services, quality of management, innovativeness, abilities to attract talented employees, long term investment value, and wise use of assets.

The second stream conceptualizes reputation based on the premise that companies are like individuals. As Staw (1991) stated: "we would treat organizations as if there were living, breathing entities with predictable behavioral tendencies" (p. 814). Thus, reputation is measured using dimensions of personality such as agreeableness, competence, and ruthlessness. These dimensions depict personal traits, including straightforward, concerned, supportive, sincere, honest, trustworthy, easy going, aggressive, and daring (Davies, Chun, Vinhas da Silva, & Roper, 2003).

The third stream associates company reputation with trust, which has two underlying traits, namely reliability and benevolence. While reliability assesses whether a company executes its promises, benevolence focuses on whether a company acts for the best interest of its consumers (Selnes & Gonhaug, 2000). Thus, trust entails that the trustee will undertake favorable actions to benefit the trustor (Mayer, Davis, & Schoorman, 1995). As Hosmer (1995) stated, trust is "the expectation of ethically justifiable behavior—that is, morally correct decisions and actions based upon ethical principles of analysis" (p. 399). This definition coheres with a broad literature on trust in institutions/authorities, emphasizing that trustors expect positive outcomes from trusted authorities (trustee) that share the same values and protect their best interests (Tyler & DeGoey, 1995). As a result, consumers are likely to think that a trusted company acts fairly, reliably, and shares their concerns (Walsh, 2009).

By linking trust to reputation, the third stream is in line with a substantial body of research that has examined trust as an attribute of reputation (Brown, 1995; Levitt, 1965). Marketing research has incorporated trust as a factor that shapes a company's reputation. For example, Schwaiger (2004) conceptualized reputation as an attitudinal construct that includes trust. Similarly, Levitt (1965) defined reputation as the extent to which consumers view

companies as reliable, trustworthy, and believable entities. Furthermore, Brown (1995) included

trust in a 6-item bipolar semantic differential scale that measures company reputation.

While there appears to be a considerable body of literature that provides various

definitions of reputation (for a review see Walker, 2010; Walsh et al., 2009), this research draws

on Lewellyn's (2002) suggestion that reputation should be examined from three lenses, namely

reputation or 'for what', reputation or 'according to whom', and the use of appropriate measures

(p.451). Therefore, I define reputation as consumers' perceptions (reputation or 'according to

whom') about a company's justice (reputation or 'for what'). This definition is compatible with

Greenberg's argument that a company's reputation of having a 'culture of justice' would attract

consumers and employees (Greenberg,1988, p. 157). When it comes to the choice of appropriate

measures to assess reputation, justice measures will be used to measure reputation for two

reasons. First, many scholars have posited that reputation measurements have not been in

congruence with the relevant conceptualization (Chun, 2005; Eberl & Schwaiger, 2005).

Moreover, scholars have criticized existing reputational scales for being lengthy (i.e., assess 10

to 20+ attributes) (e.g., Ponzi, Fombrun, & Gardberg, 2011) or for being overly focused on

financial performance (Chun, 2005). Other scholars have posited that there is no consensus on

valid measurement approaches (Nguyen & Leblanc, 2001; Wartick, 2002), which is a challenge

to assess reputation (Walker, 2010).

Second, for the purpose of this research, I argue that there are many similarities between

justice and reputation measures. For example, reputational scales (e.g., Fombrun et al., 2000;

Schwaiger, 2010; Walsh, 2009) and justice scales (e.g., Besley, 2012; McComas et al., 2014) use

almost identical measures. That is, measures used to assess reputation and procedural justice

include whether consumers' concerns are held in high regards at the company, whether a

company is concerned about customer needs, cares about consumers' concerns, and treats customers fairly on complaints. When it comes to assessing distributive justice and reputation, measures include whether a company tries to be fair in the wages it pays, supports good causes, offers high quality products and services, and creates new jobs. Identical measures exist to assess interactional justice and reputation and include whether a company treats customers courteously, treats people well, and treats its customers in a fair manner. Finally, measures that assess informational justice and reputation include items that focus on whether a company provides information/makes information available (e.g., a company is forthright in giving information to the public).

      **Relationship between reputation and affect.** As discussed earlier, affect represents an important component that reflects how people feel towards companies (Hall, 1993). Considerable evidence exists that suggests that affect influences people's evaluation of and reactions to authorities. For example, unfavorable outcomes can evoke negative emotions, which in turn influence people's evaluation of authorities. Barclay and colleagues (2005) showed that employees demonstrated anger and hostility toward a company that terminated their contracts because of a perception of low procedural and interpersonal justice. As a result, those who were laid off blamed the company and negatively evaluated it. Likewise, Grappi, Romani, & Bagozzi (2013) found that a company's unethical acts evoked consumers' negative emotional responses (i.e., anger and disgust), which resulted in consumers' negative word-of-mouth about the company.

      In contrast, positive emotions were associated with consumers' positive word-of-mouth about a company and supportive behaviors of the company. That is, consumers who expressed gratitude (a pro-social emotion) toward a company were willing to support its business through

positive word-of-mouth (Grappi et al., 2013). Consumers' feelings of trust and commitment were also found to contribute positively to company reputation and resulted in costumers' loyalty and compliance (MacMillan et al., 2005). Similarly, consumer satisfaction was associated with a favorable assessment of a company reputation (Walsh, 2009). By the same token, Romani and colleagues (2013) found that gratitude played a mediating role between socially responsible companies and consumers' supportive behaviors toward the company. That is, consumers who felt grateful toward a particular company were more likely to engage in company-favoring relational reactions such as positive word-of-mouth and advocacy activities (e.g., trying new products introduced by the company, blogging in favor of the company).

Another approach that emphasizes the role of affect in consumer evaluation of companies is the inclusion of affective measures in reputation metric tools. For example, Fombrun's Reputation Quotient (RQ) and the RepTrakTM Pulse comprise items that measure consumers' emotions as an underlying dimension of reputation. Examples of affective measures include: good feelings, admiration, respect, and trust (Fombrun et al., 2000; Ponzi, Fombrun, & Gardberg, 2011). Likewise, Schwaiger's reputation scale (2004) includes three items that measure affect by asking consumers the extent to which they like the company, identify with it, and whether it is a company they would regret more if it didn't exist anymore than they would with other companies.

Another aspect that emphasizes the positive relationship between affect and company reputation is that affect influences trust, which is a dimension (Dowling, 2001) or an antecedent of reputation (Walsh et al., 2009). As Schoorman, Mayer, & Davis (2007) stated: "...while emotions are being experienced, they may lead the trustor to update their prior perceptions of the trustworthiness dimensions and trust such that even after the emotions dissipate, the effect on the

cognitive evaluation remains" (p. 349). In this regard, studies have shown that negative emotions decrease trust, while positive emotions increase trust. To illustrate, anger is associated with decreased trust, whereas gratitude is associated with a higher level of trust (Dunn & Schweitzer, 2005). Marketing studies have shown that consumers' perceived ethicality of companies was associated with positive affect towards product brand and trust (Singh, Iglesias, & Batista-Foguet, 2012). In general, prior studies suggest that affect can influence the degree to which consumers trust a company, and subsequently consumers' evaluation of a company's reputation.

Drawing on previous research that asserts the relationship between affect and reputation, I propose the following hypothesis:

**H9:** Positive affective reactions will be positively associated with consumer perception of the company's reputation for distributive justice.

**H10:** Positive affective reactions will be positively associated with consumer perception of the company's reputation for the justice dimension under investigation

**Relationship between reputation and purchase decision.** The signaling theory holds that company reputation represents an external information cue that consumers use to assess companies' attributes and products (Walsh & Beatty, 2007; Walsh, Beatty, & Shiu, 2009). Thus, reputation can serve as a heuristic cue that guides consumers' purchase decisions (Chun, 2005) and boosts consumer confidence in companies' products or advertising claims (Fombrun & Van Riel, 1998; Lafferty & Goldsmith, 1999), especially when uncertainty prevails about a company's products (Roberts & Dowling, 2002). Additionally, reputation can be regarded as a valued brand that may involve premium pricing (Yoon et al., 1993) and increase consumers' perceived value of products. That is, well-reputed companies can charge a price premium because favorable reputation suggests quality of products (Yoon et al., 1993).

Studies have shown that consumers act favorably towards companies with favorable reputation. For example, consumers are more likely to show commitment and loyalty towards companies with a favorable reputation (Bartikowski, Walsh, & Beatty, 2011). Further, Landon & Smith (1997) showed that not only are consumers willing to pay premium prices, but they also view raising a price as a fair action by well-reputed companies. Similarly, Keh and Xie (2009) found that company reputation indirectly influenced purchase intention and price premium via customer trust, identification with the company, and commitment toward the company. Another experiment by Yoon and colleagues (1993) demonstrated that positive information about a company was associated with consumers' favorable evaluation of a company and their willingness to buy a company's products.

In accordance with the literature, I propose the following hypotheses:

**H11:** Consumer perception of the company's reputation for distributive justice will be positively associated with purchase intentions

**H12:** Consumer perception of the company's reputation for each dimension of justice (based on the model) will be positively associated with purchase intentions

# CHAPTER TWO: METHOD

**Stimuli**

Cereals will be the product of interest for the current study because, at the time of the study, five major food companies that produce cereals declared a voluntary GE labelling initiative. These companies are: Mars, ConAgra, General Mills, Campbell, and Kellogg's. A photograph of Kellogg's cereal box was manipulated to include one of four messages that emphasize the justice dimensions discussed previously. Stimuli are presented in Appendix A.

Kellogg's cereal product was chosen because Kellogg is the world's largest manufacturer of cereals. It produces 1600 varieties of foods in 21 countries that are sold in more than 180 countries. Furthermore, Kellogg's has a long history as a pioneer and an innovative company. For example, it manufactured the first cereal fortified with B vitamin in 1938 and the first high protein breakfast cereal 'Special K@' in 1955. Of particular relevance to this study is Kellogg's pioneering move to add nutrition and product information on cereal packages in 1930s and its usage of the guideline daily amounts on the front-of-pack. Finally, Kellogg's is one of the first companies that initiated a social online forum to get feedback from its consumers, share stories about its products with consumers, and communicate its commitment to improve communities and the environment beginning in 2015 (Kellogg's Company Fact Sheet, 2017).

**Procedure**

This study used an online, between-subjects design. Participants were randomly assigned to one of five conditions. The control condition did not include any justice-related information. The other four conditions portrayed GE voluntary labelling initiative using justice dimensions. Experiment conditions, conceptualization of justice dimensions, and justice messages are presented in Table 1.

Table 1. Experiment Conditions, Conceptualization of Justice Dimensions, and Justice Messages.

| Control Condition | Condition A | Condition B | Condition C | Condition D |
|---|---|---|---|---|
| | Distributive justice (conceptualized as sharing GE benefits) | Procedural and distributive justice (conceptualized as grant consumers' voice in decision making). | Interactional and distributive justice (Conceptualized as respectful treatment) | Informational and distributive justice (Conceptualized as providing accurate, timely information) |
| At Kellogg's, we are committed to offering a well-balanced breakfast that tastes great. We believe breakfast is the most important meal of the day. That's why we produce varieties of cereals with delicious flavors to help fuel your morning.

Try them a different way every day and see for yourself how great your day can feel. | At Kellogg's, we are committed to sharing with your customers the benefits of using genetic engineering. That's why we decided to voluntarily label our products for the presence of bioengineered ingredients.

Using genetic engineering lets our farmers use less pesticides and contributes to a healthier world. | At Kellogg's, we listen to our customers who want to know what is in the food on their plates.

We are also committed to sharing with your customers the benefits of using genetic engineering. That's why we decided to voluntarily label our products for the presence of bioengineered ingredients.

Using genetic engineering lets our farmers use less pesticides and contributes to a healthier world. | At Kellogg's, we treat our customers with respect. We are also committed to sharing with your customers the benefits of using genetic engineering. That's why we decided to voluntarily label our products for the presence of bioengineered ingredients.

Using genetic engineering lets our farmers use less pesticides and contributes to a healthier world. | At Kellogg's, we provide our customers with information about our foods. We are also committed to sharing with your customers the benefits of using genetic engineering. That's why we decided to voluntarily label our products for the presence of bioengineered ingredients.

Using genetic engineering lets our farmers use less pesticides and contributes to a healthier world. |

Prior to the experiment, a pretest of the questionnaire was conducted via mTurk on a sample of 300 participants with different socio-demographic characteristics to test question content, wording and sequencing, and to validate the stimuli.

**Sample**

The experiment used a nationally representative sample of 1,658 US adults from Amazon Mechanical Turk. Before participating in the study, subjects were screened using four questions to ascertain that they do shopping trips for themselves/their families and that they buy cereal. For the experiment, participants first saw one photo of cereal box and then were asked to answer questions about affective reactions, perceived risk, perceived benefit, company reputation, and purchase intention.

**Measurements**

For the present study, the measurement scales adopted herein were adapted from previous studies in the field of risk communication (Poortinga & Pidgeon (2007), marketing (Bian & Forsythe, 2012; Dodds, Monroe, & Grewal, 1991), and organizational justice (Besley, 2010; De cremer & Sedikides, 2005; McComas et al., 2014).

For the manipulation check questions, I used items from previous studies (Besley, 2012; Besley et al., 2006; McComas et al., 2014) to verify that the four justice dimensions were effectively manipulated. Based on the experimental condition to which participants were randomly assigned, participants answered manipulation check questions that used six-point bipolar scales as follows:

- Control condition (Condition A): Participants were asked to answer the three following questions: 'In the previous photo, was the cereal genetically engineered?' Response items included (yes, no, I don't know). 'In the previous photo, the company that produced the cereal was…..' Response items included (Quaker Oats Co., Kellogg's, General Mills, and

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Nestle). 'To help consumers know about cereals, the company included -------.' Response items included (website link, QR code, hotline number, and Facebook and Twitter address).

- Distributive justice (condition B): 'I don't think/think Kellogg's wants to share the benefits of using GE with consumers like me', 'I don't think/think Kellogg's wants its consumers to know more about the benefits of GE products', 'I don't think/think Kellogg's labelling decision aims to show consumers that GE will result in more quality food.'

- Procedure justice (condition C): 'I don't think/think Kellogg's tries to hear what people like me think', 'I don't think/think Kellogg's responds if someone like me tries to voice his/her views', 'I don't think/think Kellogg's labels its cereals because of public input.'

- Interpersonal justice (condition D): 'I don't think/think Kellogg's respects its consumers'; 'I don't think/think Kellogg's tries very hard to understand the views of consumers like me who demand that GE products should be labelled', 'I don't think/think If I were to call Kellogg's customer line to inquire about GE products, employees will treat me politely.'

- For informational justice (condition E): 'I don't think/think Kellogg's provides consumers with information about how its GE products are made', 'I don't think/think Kellogg's tries to make information about its GE products hard/clear for most people to understand', 'I don't think/think Kellogg's wants to ensure that consumers like me have access to accurate information about GE food.'

*Affective reactions.* Affective reactions were assessed using items from previous organizational and advertising research to measure positive affect (De Cremer & Sedikides, 2005). Participants were asked to indicate the extent to which they are happy, content, angry,

confused, upset, and annoyed about Kellogg's voluntary GE labelling initiative. Items were scored using a seven-point scale ranging from (1=not at all, 7= very much). Although I was only interested in these items I included filler emotions related to disappointment, surprise, and satisfaction to reduce the demand characteristics for the specific affect assessed.

*Reputation.* As argued earlier, reputation was assessed using four dimensions of justice from previous studies (Besely, 2006; Besley, 2010; McComas et al., 2014; McComas, Besley, & Yang, 2008). Distributive justice was defined as perceiving that the voluntary GE labelling initiative will result in benefits for consumers. It was measured using the following four items: 'Kellogg's labelling decision helps people like me to know about the benefits of using GE', 'Kellogg's labelling decision allows people like me to receive a fair share of the benefits of GE', 'Kellogg's labelling decision will bring benefits to people like me', and 'Kellogg's tries to benefit itself rather than consumers by labelling GE products.'

Procedural justice was defined as perceiving that the voluntary GE labelling initiative results from an unbiased process that takes into account public input. It was measured using the three following items: 'Kellogg's is willing to listen to people like me', 'I think Kellogg's does what it wants, regardless of public input', 'Kellogg tries to hear what people like me think.'

Interpersonal justice was defined as perceiving that the voluntary GE labelling initiative is an example of respectful treatment. It was measured using three items: 'Kellogg's cares about what people like me think', 'Kellogg's respects people like me', 'Kellogg's is honest.'

Informational justice was defined as perceiving that the voluntary GE labelling initiative aims to provide consumers with accurate, reliable information. It was measured using the three following items: 'Kellogg's makes information available quickly enough', 'Kellogg's tries to make things too hard for most people to understand', 'Kellogg's tries to make enough

information available for its consumers.' All items were scored using a seven point Likert scale where one indicates strong disagreement and seven indicates strong agreement.

*Perceived risk.* Questions that measure perceived risk were adapted from previous studies that focus on GE food (Poortinga & Pidgeon, 2007). Participants were asked to answer the following questions: 'GE could produce foods that have environmentally disastrous consequences', 'GE will make farmers dependent on big companies that have patents', 'GE is being driven more by profit than public interest', and 'GE can be harmful to public health.' Items were scored using 7-point Likert scale where one indicates strong disagreement and seven indicates strong agreement.

*Perceived benefit.* Questions that measure perceived benefit were adapted from previous studies that focus on GE food (Poortinga & Pidgeon, 2007). Participants were asked to answer the following questions: 'GE could help provide healthier foods', 'GE could benefit the environment', 'GE could produce foods for people in developing countries', 'GE could produce safer foods', 'GE food could improve the prospects of American famers.' Items were scored using 7-point Likert scale where one indicates strong disagreement and seven indicates strong agreement.

*Purchase intention.* Purchase intention was measured using a multidimensional scale used in previous studies (Bian & Forsythe, 2012; Dodds, Monroe, & Grewal, 1991). Participants were asked to rate the likelihood of purchasing Kellogg's cereals by responding to the following questions: 'I would consider buying the Kellogg's cereal that I saw in the photo if I were going to purchase cereals', 'If I were shopping for cereals, the likelihood that I would purchase Kellogg's cereal is high.' Items were scored using 7-point Likert scale where one indicates strong disagreement and seven indicates strong agreement.

*Demographics variables.* Participants were asked questions related to age, education, income, race, political affiliation, and gender.

**Data Collection**

I ran the experiment on Qualtrics using subjects from Amazon Mechanical Turk (AMT). Participation in the study was limited to US residents. Participants were paid 70 cents in return for participation. In the beginning of the survey, participants answered four screening questions to ensure that they sometimes shop for themselves/their families and that they buy cereal. In total, 1,658 subjects participated in the study after passing the screening questions. Of note, 584 subjects were excluded from the analysis for failing to correctly answer three comprehension questions and one attention question. These questions were designed to ensure that subjects attended to the messages on the cereal box. Subjects who correctly answered the comprehension and attention questions spent 86 seconds (on average) looking at the stimuli whereas those who failed these questions spent 43 seconds (on average) looking at the stimuli. The final sample included 1,074 subjects who correctly answered the manipulation check and attention questions. Approximately 45% of these subjects were males, 79% were white, 10% were black,

2% were Asian, 5% were Hispanic, 2% were Native Hawaiian/Pacific Islander, 2% were others, and the average age was 37(SD = 13).

Prior to data collection, I ran a pretest (n = 300) to examine the effect of the justice manipulation check on its associated measure of reputation for justice. Analyses indicated a small effect size and marginal significant effect of distributive justice message on reputation for distributive justice (n2p = 0.01, p = 0.045), a moderate effect size for procedural justice message on reputation for procedural justice (n2p = 0.04, p = 0.03), a small effect size and marginal significant effect of interpersonal justice message on reputation for interpersonal justice (n2p = 0.01, p = 0.05), and a small effect size and marginal significant effect of informational justice

message on reputation for informational justice ($n2p = 0.01$, $p = 0.047$). As noted, these analyses showed small effect size and borderline significant effect at the 0.05 significance level, I decided to pursue the data collection for the whole sample predicting that a larger sample size would improve the marginal significant effect of justice manipulation on its associated measure of reputation for justice. Another reason for pursuing data collection was that procedural, distributive, interpersonal and informational justice labels had a moderate effect size on positive affective reactions ($n2p = 0.07$, $p = 0.03$), which is consistent with H1-H4.

**Data Analysis**

I conducted the analyses using SPSS 22 and Mplus (version 7). The data were examined using two ways: First, I ran multiple linear regression analyses to examine H1-H4 related to the effect of justice messages on consumers' affective reactions and assess justice manipulation checks. Second, I used structural equation modeling (SEM) to assess the inter-relationships between the variables as proposed in H5-H12.

# CHAPTER THREE: RESULTS

Scales were created for baseline likeability, and post exposure affective reactions, perceived benefit, perceived risk, and perceived reputation for distributive justice, perceived reputation for procedural justice, perceived reputation for interpersonal justice, perceived reputation for informational justice, and purchase intentions. I ran multiple exploratory factor analyses using the maximum likelihood method of extraction and varimax rotation. As expected, six items loaded on likeability ($\alpha = 0.92$), six items on affective reactions ($\alpha = 0.92$), five items on perceived benefit ($\alpha = 0.92$). Guided by a priori theoretical rationale suggesting that the four dimensions of justice are distinct constructs (Colquitt et al., 2001; Rupp & Cropanzano, 2002) and drawing on previous studies that had conceptually and methodologically established the measurement of each justice construct, I ran separate exploratory analyses for the associated measure of justice reputation. Analyses showed that four items loaded on reputation for distributive justice ($\alpha = 0.75$), four items on reputation for procedural justice ($\alpha = 0.81$), three items on reputation for interpersonal justice ($\alpha = 0.79$), three items on reputation for informational justice ($\alpha = 0.76$), and four items on purchase intention ($\alpha = 0.94$). Means, standard deviations, Cronbach's alpha of the variables within each scale are provided in Table 2.

Table 2. Summary of Items Means, Standard Deviation, and Factor Loading for Exploratory Factor Analysis.

| Items | M(SD) | Factor |
|---|---|---|
| Baseline likeability | | |
| I regard Kellogg's as a likeable company | 5.93 (1.21) | .90 |
| I regard Kellogg's as a friendly company | 5.80 (1.25) | .87 |
| I think Kellogg's offers great value for the money | 5.47 (1.32) | .74 |
| I regard Kellogg's as a trustworthy company | 5.87 (1.27) | .89 |
| I would recommend Kellogg's products to other people | 5.70 (1.45) | .84 |
| Kellogg's is a company I can identify with | 4.95 (1.60) | .71 |
| Total M(SD) | 33.72 (6.93) | |
| α =.92 | | |
| Affective reactions | | |
| Happy | 4.46 (1.56) | .90 |
| Content | 4.72 (1.65) | .89 |
| Angry | 5.70 (1.72) | .89 |
| Annoyed | 5.57 (1.80) | .88 |
| Confused | 5.58 (1.78) | .78 |
| Upset | 5.57 (1.78) | .70 |
| Total M(SD) | 31.60 (8.50) | |
| α =.92 | | |
| Reputation for distributive justice | | |
| Kellogg's benefits itself more than customers like me* | 3.92 (1.81) | .75 |
| Kellogg's puts customers like me at risk for its profit* | 5.35 (1.81) | .73 |
| Kellogg's decision will hurt customers like me | 5.27 (2.03) | .69 |
| Kellogg's decision will bring benefits to customers like me. | 5.18 (1.52) | .61 |
| Total M(SD) | 19.72(5.51) | |
| α = .75 | | |
| Reputation for procedural justice | | |
| Kellogg's is willing to listen to customers like me | 5.05 (1.54) | .86 |
| Kellogg's is willing to listen to what customers like me say | 5.07 (1.35) | .90 |
| Kellogg's tries to hear what customers like me think. | 5.04 (1.53 | .89 |
| Kellogg's does what it wants, irrespective of what customers | 4.00 (1.87) | .66 |
| Total M(SD) | 19.15(5.32) | |
| α = .81 | | |
| Reputation for interpersonal justice | | |
| Kellogg's respects consumers like me | 5.21 (1.50) | .90 |
| Kellogg's cares about what consumers like me think | 5.11 (1.54) | .85 |
| Kellogg's is honest when it comes to labelling GE foods | 5.60 (1.37) | .69 |
| Total M(SD) | 15.92(3.88) | |
| α =.79 | | |
| Reputation for informational justice | | |
| Kellogg's makes information available quickly enough | 5.27(1.41) | .84 |
| Kellogg's makes things too hard for most people to | 5.36(1.80) | .86 |
| Kellogg's make enough information available for costumers | 5.66 (1.37) | .69 |
| Total M(SD) | 10.92(2.50) | |
| α = .76 | | |

Table 2 (cont'd)

<u>Percieved risk</u>

| | | |
|---|---|---|
| GE could produce foods that have environmental disastrous | 3.75 (1.98) | .73 |
| GE will make farmers dependent on big companies | 4.69 (1.79) | .58 |
| GE is being driven more by profit than public interest | 4.74 (1.88) | .53 |
| Eating GE food is not safe | 3.41 (1.91) | .71 |
| GE can be harmful to public health | 3.83 (1.02) | .86 |
| Total M(SD) | 20.43 (8.12) | |
| α= .89 | | |

<u>Perceived benefit</u>

| | | |
|---|---|---|
| GE could help to provide healthier foods | 4.43 (1.92) | .73 |
| GE could benefit the environment by using less pesticides | 5.08 (1.76) | .75 |
| GE could produce more foods for developing countries | 5.26 (1.76) | .70 |
| GE could produce safer foods | 4.13 (1.92) | .69 |
| GE food could improve the prospects of farmers | 4.48 (1.81) | .71 |
| Total M(SD) | 23.39 (8.01) | |
| α=.92 | | |

<u>Purchase intention</u>

| | | |
|---|---|---|
| I would consider buying Kellogg's cereal if I were going to | 4.56 (2.10) | .80 |
| If I were shopping for cereals, the likelihood that I would | 4.19 ( 2.07) | .78 |
| I would be willing to eat Kellogg's genetically engineered | 4.71 (2.13) | .83 |
| I would buy Kellogg's cereals if I happened to see it in my | 4.35 (2.02) | .81 |
| Total M(SD) | 17.82 (8.05) | |
| α=.94 | | |

Note: Values on all scales range from 1 to 7, with higher values indicating greater agreement. *Items reverse coded to reflect higher value indicating greater agreement

**Manipulation Check**

To evaluate the justice manipulation, I ran multiple regression analyses to examine the effect of each justice message on its associated measure of perceived reputation for justice. Those analyses were then re-run controlling for participants' preexisting likeability of Kellogg's to examine the confounding effect of likeability on affective reactions and perceived reputation for justice.

In the distributive justice condition, the analysis showed that participants who read the distributive justice message did not rate Kellogg's reputation for distributive justice higher than those who read the control message. Controlling for preexisting likeability of Kellogg's, analysis still indicated that, relative to the control message, distributive justice message did not have an effect on Kellogg's reputation for distributive justice. Detailed results are reported in Table 3.

For the procedural justice condition, I also ran a multiple regression using the control condition as the reference group and compared participants who read the procedural justice message only. Analyses showed that participants who read the procedural justice message rated Kellogg's reputation for procedural justice higher than those who read the control message. Controlling for participants' preexisting likeability of Kellogg's, analysis continued to indicate no evidence of an effect of the procedural justice message on Kellogg's reputation for procedural justice compared to the control message Detailed results are reported in Table 3.

For the interpersonal justice condition, I ran a multiple regression analysis using the control condition as the reference group and compared participants who read the interpersonal justice message only. The analysis indicated that participants who read the interpersonal justice message did not rate Kellogg's reputation for interpersonal justice higher than those who read the control message.

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Controlling for likeability, the analysis continued to show no effect of the interpersonal justice message on Kellogg's reputation for interpersonal justice. Detailed results are reported in Table 3.

Finally, for the informational justice condition, I ran a multiple regression using the control condition as the reference group and compared participants who read the informational justice message only. The analysis indicated that participants who read the informational justice message did not rate Kellogg's reputation for informational justice higher than those who read the control message. Controlling for likeability, the analysis still showed no evidence of an effect of the informational justice message on Kellogg's reputation for interpersonal justice. Detailed results are reported in Table 3.

Table 3. Summary of Multiple Regression Analyses for The Effect of Distributive, Procedural, Interpersonal, Informational, and Fair Process Messages on Their Associated Measure of Reputation, Controlling for Likeability (In Model 2).

| Predictors | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| | B | SE B | β | B | SE B | β |
| **Reputation for distributive justice** | | | | | | |
| Constant | 5.01*** | .09 | | 3.95 | .22 | |
| Distributive justice message | .08 | .13 | .04 | .04 | .13 | .01 |
| Likeability | | | | .19*** | .04 | .16 |
| *Adjusted R²* | | | .01 | | .02*** | |
| **Reputation for procedural justice** | | | | | | |
| Constant | 4.66*** | .09 | | 1.81*** | .20 | |
| Procedural justice message | .39*** | .14 | .11 | .38*** | .12 | .09 |
| Likeability | | | | .51*** | .03 | .42 |
| *Adjusted R²* | | .02** | | | .03** | |
| **Reputation for interpersonal justice** | | | | | | |
| Constant | 5.28*** | .09 | | 3.28*** | .18 | |
| Interpersonal justice message | .09 | .12 | .03 | .09 | .12 | .03 |
| Likeability | | | | .54*** | .03 | .48 |
| *Adjusted R²* | | .01 | | | .13*** | |
| **Reputation for informational justice** | | | | | | |
| Constant | 5.44*** | .08 | | 3.94*** | .17 | |
| Informational justice message | .18 | .11 | .06 | .18 | .11 | .06 |
| Likeability | | | | .45*** | .03 | .43 |
| *Adjusted R²* | | .02 | | | .18*** | |
| **Reputation for fair process** | | | | | | |
| Constant | 4.95*** | .12 | | 4.87*** | .19 | |
| Fair process message | .13*** | .04 | .06 | .12*** | .05 | .04 |
| Likeability | | | | .14*** | .03 | .05 |
| *Adjusted R²* | | .05*** | | | .06*** | |

Note. Control group is a reference group.
*p<.05, **p<.01, ***p<.001

    The previous analyses showed that the manipulation check for distributive, interpersonal,

and informational justice yielded no evidence of an effect on their relevant measure of perceived

reputation for justice. Although some researchers (e.g., Mutz & Pemantle, 2015) argue that a manipulation check is not necessary when the independent variable and its operationalization are completely identical, I preferred to adopt the view positing that the independent variable has to be effectively manipulated to ensure the effect of experiment treatment on participants (Sansone, Morf, & Panter, 2008).

Given that the interpersonal and informational justice messages did not yield evidence of a significant effect on their associated measure of reputation for perceived justice, I decided to combine procedural, interpersonal, and informational messages for the subsequent data analyses. I combined these messages in one group (hereinafter referred to as 'Fair process message'). I ran exploratory factor analysis using the maximum likelihood method of extraction and varimax rotation. Procedural, interpersonal, and informational justice items loaded on one factor producing an average of variance accounted for 69.6%. Then, I created a scale hereinafter referred to as 'Reputation for fair process' that included measurement items of procedural, interpersonal, and informational justice. Cronbach's alpha for 'reputation for fair process' scale showed high internal reliability ($\alpha= 0.93$).

It is important to note that the decision to combine the three justice messages, and subsequently, combine the measurement items of procedural, interpersonal, and informational justice is incongruent with some theoretical and practical arguments positing that justice only has two distinct dimensions, namely distributive and procedural (Cropanzano & Greenberg, 1997; Tyler & Bies,1990 ).

While the distinction between procedural and distributive justice has clear support (Folger & Konovsky, 1989; Sweeney & McFarlin, 1993), the independence between procedural, interpersonal, and informational justice is debatable. For example, researchers (e.g., Cropanzano & Greenberg,1997) contended that interpersonal justice is a social form of procedural justice. By

the same token, other researchers (e.g., Tyler 1984, 1990) have argued that interpersonal and informational justice reflect Leventhal's rules of procedural justice (e.g., being respectful and provide explanations). Following this logic, interpersonal and informational justice could be treated as two dimensions of procedural justice and not be separated into three distinct dimensions (Cropanzano & Randall, 1993; Skarlicki & Latham, 1997; Byrne & Cropanzano, 1999; Tyler & Bies, 1990). As noted in the literature review, some researchers have operationalized procedural justice by measuring procedural justice along with interpersonal justice, and informational justice in one combined scale (McComas, Besley, & Steinhardt, 2014; Folger & Konovsky,1989; Konovsky & Floger, 1991). In accord with this argument, I combined the procedural, interpersonal, and informational justice messages into one group hereinafter referred to as 'fair process message' and created one scale hereinafter referred to as 'reputation for fair process.'

Accordingly, I changed the hypotheses to reflect the combination of procedural, interpersonal, and informational justice measurements into one group. As such, I ventured two hypotheses that examine the effect of distributive justice message (H1) and fair process message (H2) on affective reactions compared to the control message. The amended conceptual model including the hypotheses under investigation is presented in Figure 2.

Figure 2. Amended conceptual model
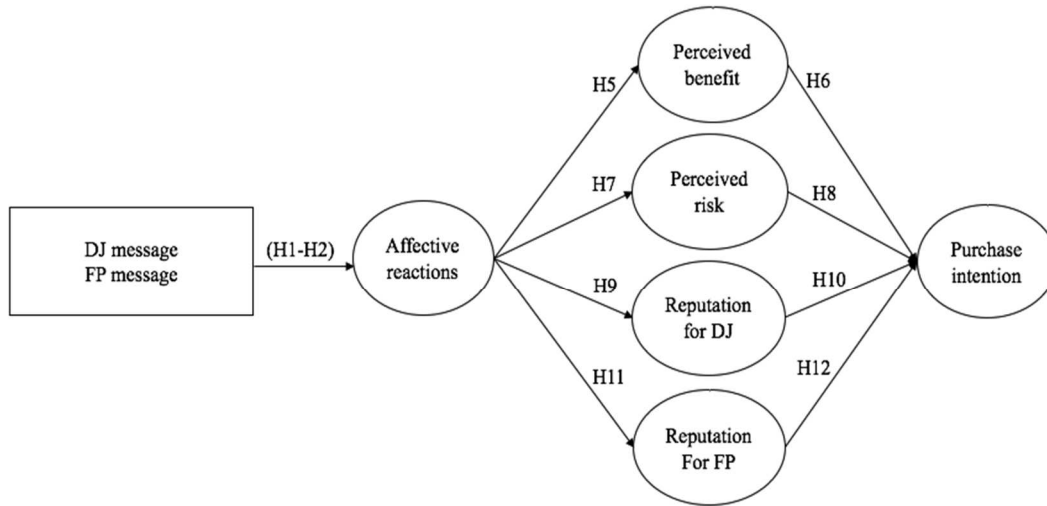


Note. DJ= Distributive Justice, FP= Fair Process

To re-evaluate the justice manipulation check in the three conditions, I ran multiple regression analyses to test the effect of fair process labelling on Kellogg's reputation for fair process, using the control message as a reference group and included only participants who read the procedural, interpersonal, and informational justice messages and those in the control condition. The analysis indicated a moderate effect size of fair process message on Kellogg's reputation for fair process ($n2p = .05$, $p = .03$). Controlling for preexisting likeability, the results continued to indicate a moderate effect of fair process message on Kellogg's reputation for fair process ($n2p = .06$, $p = .03$).

**Hypotheses Test**

**Multiple linear regression analyses.** For H1 related to the effect of distributive justice message on affective reactions compared to the control message, I ran a multiple regression

analysis using the control message as the reference group and included participants who read the distributive justice message only. Analysis showed that distributive justice message was not associated with higher positive affective reactions compared to the control message. For H2 related to the effect of fair process message on affective reactions, I ran a multiple regression

analysis using the control message as a reference group and included participants who read the procedural, interpersonal, and informational message only. Analysis showed that process fair message was associated with higher positive affective reactions compared to the control message. Detailed results are reported in Table 4.

I re-ran the analysis using distributive message as a reference group, the results indicated that the fair process message was also associated with higher positive affective reactions compared to the distributive justice message. Controlling for preexisting likeability, the results continued to indicate that fair process message was associated with higher positive affective reactions compared to the distributive justice message. Detailed results are reported in Table 4.

Table 4. Summary of Multiple Regression Analyses for The Effect of Justice Messages on Affective Reactions

| Predictors | B | SE B | β |
|---|---|---|---|
| Affective reactions | | | |
| Constant (Control message as a reference group) | 4.93*** | .09 | |
| Distributive justice message | .21 | .12 | .16 |
| Procedural justice message | .37*** | .13 | .31 |
| Interpersonal justice message | .39*** | .12 | .32 |
| Informational justice message | .32** | .14 | .29 |
| Adjusted $R^2$ | | .01** | |
| Affective reactions | | | |
| Constant (Distributive message as a reference group) | 5.14*** | .09 | |
| Control message | -.21 | .12 | -.07 |
| Procedural justice message | .16*** | .13 | .10 |
| Interpersonal justice message | .18*** | .13 | .16 |
| Informational justice message | .11** | .12 | .13 |
| Adjusted $R^2$ | | .01** | |

*$p<.05$, **$p<.01$, ***$p<.001$

Structural equation modelling. Hypotheses (H5-H12) were tested using structural equation modeling (SEM) specifically, the maximum likelihood estimation technique in Mplus. Hypothesized models were analyzed using the two-step modeling approach recommended by Anderson and Gerbing (1988). For each model, the first step consisted of an analysis of the measurement model to examine the relationship between individual indicators and latent variables. The parameters and standard error estimates in the three models are reported in Tables 5-7. The second step was to test the structural relationships among latent constructs through a series of recursive relationships.

Table 5. Parameters and Standard Error Estimates for The Control Model

| Model Parameters | Stand. estimate (SE) | Unstand. Estimate (SE) | Residual Variance |
|---|---|---|---|
| Loading/effects on affective reactions | | | |
| Happy | .79(.04) | 1.00 | .06 |
| Content | .71(.03) | 1.26(.07) | .12 |
| Angry | .87(.03) | 1.55(.12) | .10 |
| Annoyed | .73(.03) | 1.30(.15) | .08 |
| Confused | .92(.02) | 1.70(.12) | .26 |
| Upset | .90(.04) | 1.68(.13) | .15 |
| Affective reactions | | | .37 |
| Loading/effects on perceived reputation for distributive justice | | | |
| Kellogg's benefits itself rather than consumers* | .72(.04) | 1.00 | .41 |
| Kellogg's puts customers at risk for its profit* | .70(.05) | 1.53(.12) | .30 |
| Kellogg's decision will hurt customers like me* | .73(.05) | 1.58(.87) | .25 |
| Kellogg's decision brings benefits to customers | .66(.03) | 1.72(.07) | .22 |
| Reputation for distributive justice | | | .29 |
| Loading/effect on perceived reputation for procedural justice | | | |
| Kellogg's is willing to listen to customers like me | .80(.32) | 1.00 | .17 |
| Kellogg's is willing to listen to what customers say | .77(.03) | 1.69(.06) | .29 |
| Kellogg's tries to hear what customers like me think. | .82(.02) | 1.45(.04) | .16 |
| Kellogg's respects consumers like me | .65(.04) | 1.67(.03) | .31 |
| Kellogg's cares about what consumers like me think | .88(.03) | 1.99(.06) | .14 |
| Kellogg's is honest when it comes to labelling GE foods | .83(.02) | 1.54(.10) | .22 |
| Kellogg's makes information hard to understand* | .69(.04) | .76(.04) | .19 |
| Kellogg's makes information available quickly enough | .61(.03) | .84(.06) | .14 |
| Kellogg's tries to make enough information available | .69(.04) | .99(.05) | .24 |
| Reputation for procedural justice | | | .33 |
| Perceived risk | | | |
| GE could have bad consequences for the environment | .89(.02) | 1.00 | .21 |
| GE will make farmers dependent on big companies. | .67(.03) | .61(.02) | .28 |
| GE is being driven more by profit than public interest. | .75(.03) | .71(.03) | .37 |
| Eating GE food is not safe | .94(.01) | 1.09(.02) | .20 |
| GE can be harmful to public health | .92(.02) | 1.10(.02) | .16 |
| Perceived risk | | | .39 |
| Perceived benefit | | | |
| GE could help to provide healthier foods | .84(.03) | 1.00 | .30 |
| GE could benefit the environment | .83(.02) | .87(.03) | .24 |
| GE could produce foods for developing countries | .66(.02) | .76(.02) | .17 |
| GE could produce safer foods | .87(.03) | .95(.01) | .20 |
| GE food can improve the prospects of farmers | .79(.02) | .92(.03) | .14 |
| Perceived benefit | | | .27 |
| Purchase intention | | | |
| I would consider buying Kellogg's GE cereal | .92 (.01) | 1.00 | .19 |
| The likelihood that I would purchase this cereal is high | .94 (.02) | 97 (.01) | .32 |
| I would be willing to eat Kellogg's GE cereal. | .92 (.01) | .94 (.04) | .21 |
| I would buy Kellogg's GE cereals if I happened to see it | .89 (.07) | .92 (.01) | .17 |
| Purchase intention | | | .29 |

Note: Values on all scales range from 1 to 7, with higher values indicating greater agreement.
* Reverse coded item.

Table 6. Parameters and Standard Error Estimates for The Distributive Justice Model

| Model Parameters | Stand. estimate (SE) | Unstand. Estimate (SE) | Residual Variance |
|---|---|---|---|
| Loading/effects on affective reactions | | | |
| Happy | .82(.04) | 1.00 | .28 |
| Content | .71(.03) | 1.27(.05) | .39 |
| Angry | .83(.01) | 1.58(.08) | .22 |
| Annoyed | .92(.02) | 1.79(.10) | .41 |
| Confused | .90(.03) | 1.70(.09) | .32 |
| Upset | .91(.04) | 1.69(.08) | .22 |
| Affective reactions | | | .26 |
| Loading/effects on perceived reputation for distributive justice | | | |
| Kellogg's benefits itself rather than consumers* | .77(.04) | 1.00 | .49 |
| Kellogg's puts customers at risk for its profit* | .79(.02) | 1.73(.03) | .24 |
| Kellogg's decision will hurt customers like me* | .67(.08) | 1.82(.07) | .32 |
| Kellogg's decision will bring benefits to customers. | .60(.03) | 1.15(.03) | .17 |
| Reputation for distributive justice | | | .30 |
| Loading/effect on perceived reputation for procedural justice | | | |
| Kellogg's is willing to listen to customers like me | .80(.03) | 1.00 | .18 |
| Kellogg's is willing to listen to what customers like me say | .77(.04) | 1.46(.02) | .28 |
| Kellogg's tries to hear what customers like me think. | .83(.03) | 1.33(.04) | .17 |
| Kellogg's respects consumers like me | .70(.02) | 1.49(.07) | .29 |
| Kellogg's cares about what consumers like me think | .88(.05) | 1.54(.04) | .30 |
| Kellogg's is honest when it comes to labelling GE foods | .83(.03) | 1.34(.02) | .19 |
| Kellogg's makes information too hard to understand* | .69(.02) | 1.16(.03) | .25 |
| Kellogg's makes information available quickly enough | .75(.04) | 1.26(.05) | .33 |
| Kellogg's tries to make enough information available | .65(.09) | 1.05(.08) | .21 |
| Reputation for procedural justice | | | .34 |
| Perceived risk | | | |
| GE could have bad consequences for the environment | .89(.02) | 1.00 | .32 |
| GE will make farmers dependent on big companies. | .64(.02) | 1.06(.02) | .21 |
| GE is being driven more by profit than public interest. | .93(.04) | 1.39(.02) | .37 |
| Eating GE food is not safe | .71(.03) | 1.03(.05) | .23 |
| GE can be harmful to public health | .90(.04) | 1.23(.02) | .19 |
| Perceived risk | | | .28 |
| Perceived benefit | | | |
| GE could help to provide healthier foods | .84(.03) | 1.00 | .19 |
| GE could benefit the environment | .83(.02) | 1.19(.02) | .37 |
| GE could produce foods for developing countries | .66(.03) | 1.06(.03) | .39 |
| GE could produce safer foods | .91(.04) | 1.10(.06) | .27 |
| GE food could improve the prospects of farmers | .88(.04) | .99(.05) | .11 |
| Perceived benefit | | | .31 |
| Purchase intention | | | |
| I would consider buying Kellogg's GE cereal | .98(.01) | 1.00 | .38 |
| The likelihood that I would purchase this cereal is high | .92(.02) | .97(.01) | .26 |
| I would be willing to eat Kellogg's GE cereal. | .94(.01) | .99(.04) | .33 |
| I would buy Kellogg's GE cereals if I happened to see it | .92(.07) | 1.06(.03) | .29 |
| Purchase intention | | | .39 |

Note: Values on all scales range from 1 to 7, with higher values indicating greater agreement.
*Reverse coded items

Table 7. Parameters and Standard Error Estimates for The Fair Process Model.

| Model Parameters | Stand. estimate (SE) | Unstand. Estimate (SE) | Residual Variance |
|---|---|---|---|
| Loading/effects on affective reactions | | | |
| Happy | .77(.04) | 1.00 | .36 |
| Content | .82(.02) | 1.23(.07) | .41 |
| Angry | .79(.03) | 1.56(.12) | .18 |
| Annoyed | .87(.03) | 1.48(.15) | .22 |
| Confused | .91(.02) | 1.67(.12) | .36 |
| Upset | .80(.04) | 1.72(.13) | .18 |
| Affective reactions | | | .39 |
| Loading/effects on perceived reputation for distributive | | | |
| Kellogg's benefits itself rather than consumers* | .77(.02) | 1.00 | .34 |
| Kellogg's puts customers at risk for its profit* | .73(.03) | 1.63(.20) | .44 |
| Kellogg's decision will hurt customers like me* | .68(.02) | 1.55(.10) | .27 |
| Kellogg's decision will bring benefits to customers like | .61(.03) | 1.35(.03) | .32 |
| Reputation for distributive justice | | | .37 |
| Loading/effect on perceived reputation for procedural justice | | | |
| Kellogg's is willing to listen to customers like me' | .84(.01) | 1.00 | .32 |
| Kellogg's is willing to listen to what customers like me | .82(.01) | 1.29(.02) | .17 |
| Kellogg's tries to hear what customers like me think. | .84(.02) | 1.35(.03) | .26 |
| Kellogg's respects consumers like me | .77(.03) | 1.15(.02) | .32 |
| Kellogg's cares about what consumers like me think | .89(.03) | 1.39(.06) | .38 |
| Kellogg's is honest when it comes to GE foods | .71(.02) | 1.19(.04) | .25 |
| Kellogg's tries to make information too hard to | .78(.04) | 1.10(.03) | .18 |
| Kellogg's makes information available quickly enough | .67(.02) | 1.01(.03) | .22 |
| Kellogg's tries to make enough information available | .59(.03) | .96(.04) | .15 |
| Reputation for procedural justice | | | .40 |
| Perceived risk | | | |
| GE could have bad consequences on the environment | .82(.02) | 1.00 | .16 |
| GE will make farmers dependent on big companies. | .79(.03) | 1.11(.05) | .28 |
| GE is being driven more by profit than public interest. | .69(.01) | .99(.04) | .35 |
| Eating GE food is not safe | .80(.03) | 1.38(.04) | .28 |
| GE can be harmful to public health | .93(.03) | 1.55(.07) | .19 |
| Perceived risk | | | .31 |
| Perceived benefit | | | |
| GE could help to provide healthier foods | .87(.02) | 1.00 | .28 |
| GE could benefit the environment | .82(.01) | 1.40(.03) | .19 |
| GE could produce foods for developing countries | .78(.03) | 1.14(.03) | .34 |
| GE could produce safer foods | .84(.02) | 1.39(.04) | .29 |
| GE food could improve the prospects of farmers | .80(.03) | 1.30(.02) | .32 |
| Perceived benefit | | | .37 |
| Purchase intention | | | |
| I would consider buying Kellogg's GE cereal | .98(.01) | 1.00 | .20 |
| The likelihood that I would purchase this cereal is high | .92(.02) | 1.33(.02) | .26 |
| I would be willing to eat Kellogg's GE cereal. | .94(.01) | 1.39(.02) | .19 |
| I would buy Kellogg's GE cereals if I happened to see it | .92(.07) | 1.32(.03) | .23 |
| Purchase intention | | | .32 |

Note: Values on all scales range from1 to 7, with higher values indicating greater agreement.
* Reverse coded items

**Measurement models.** The overall fit of the resultant models demonstrated adequate fit. Details about the model fit indices, modifications indices, and model respecification are presented in Appendix B

Prior to the multi group analyses, I tested factorial equivalence of the measuring instrument, residual covariance, and latent factor means. My analyses showed that the measuring instrument operated equivalently across the three groups. Analysis for the invariance of the latent factor means showed that the means are significantly different at the 0.05 significance level. Details about testing the factorial equivalence of the measuring instruments including the computation and analyses of covariance structures and latent factor means are presented in Appendix C.

**Structural models.** Given the variance of the latent factors means across the three models, I tested the structural model in each group separately because if the hypothesized model was adequate in all groups, it may work well in the multi-group analyses (Byrne, 2011). Analysis showed that the paths (as a whole) are significantly different across the three models, which allowed to proceed with the analysis of individual paths across the three models. Detailed results of the analyses of structural parameters (as a whole) and individual coefficient paths are presented in Appendix D.

**Multi-group structural equation modelling.** For the distributive justice message group, the standardized parameter estimates indicated that reading the distributive justice message had a borderline significant effect on consumers' positive affective reactions ($\beta = 0.13$, $p = 0.045$) compared to control message This is consistent with H1. Positive affective reactions were almost positively associated with perceived benefit ($\beta = 0.12$, $p < 0.05$), which was associated with purchase intentions ($\beta = 0.19$, $p = 0.04$). This is also consistent with H3 and H4. Positive

affective reactions were not associated with consumers' perceived risk ($\beta$ = -0.20, p = 0.12), failing therefore to support H5. Perceived risk was, however, negatively associated with purchase intentions ($\beta$ = -0.47, p = 0.02), which is consistent with H6. Positive affective reactions were not associated with reputation for distributive justice ($\beta$ = 0.13, p = 0.09) nor reputation for fair process ($\beta$ = 0.24, p = 0.07). Thus H7 and H8 were not supported in the context of distributive justice message. Neither reputation for distributive justice nor reputation for fair process were associated with purchase intentions ($\beta$ = 0.18; p = 0.07) and ($\beta$ = 0.20, p = 0.12), respectively. This fails to support H8 and H10 in the context of distributive justice message. The parameter estimates for the direct and indirect path coefficients and 95% bias corrected confidence intervals generated from 1,000 bootstrap sample for both direct and indirect path coefficients in the distributive justice model are reported in Table 8.

Table 8. Parameter Estimates for The Direct and Indirect Path Coefficients and 95% Bias Corrected Confidence Intervals In The Distributive Justice Model

| Path description | β | B | SE | 95%CI |
|---|---|---|---|---|
| **Direct path** | | | | |
| DJ message → purchase intentions | .25 | .09 | .02 | [-.08, .21] |
| DJ message → affective reactions | .13[*a] | .10 | .07 | [.09, .33] |
| Affective reactions → purchase intentions | .30 | .27 | .09 | [-1.14, -.23] |
| Affective reactions → perceived benefit | .12 | .08 | .03 | [-.05, .39] |
| Perceived benefit → purchase intentions | .19[*] | .13 | .05 | [.06, 2.37] |
| Affective reactions → perceived risk | -.20 | -.16 | .10 | [-1.09, .14] |
| Perceived risk → purchase intentions | -.47[*] | -.22 | .03 | [-.36, .20] |
| Affective reactions → reputation for DJ | .13 | .10 | .05 | [-.05, 1.19] |
| Reputation for DJ → purchase intentions | .18 | .19 | .06 | [-.10, 1.21] |
| Affective reactions → reputation for FP | .24 | .21 | .07 | [-.42, .93] |
| Reputation for FP→ purchase intentions | .20 | .30 | .11 | [-1.20, 3.14] |
| **Indirect path** | | | | |
| Affective reactions → perceived benefit → purchase intentions | .02 | .03 | .01 | [-.02, 1.19] |
| Affective reactions → perceived risk → purchase intentions | -.09 | -.10 | .04 | [-2.12, .09] |
| Affective  reactions → reputation for DJ → purchase intentions | .02 | .02 | .03 | [-.14, -.05] |
| Affective reactions → reputation for FP→ purchase intentions | .04 | .03 | .02 | [-.03, 1.04] |

Note. DJ=Distributive justice; FP=Fair process. Subscript [a] denotes a borderline significant effect (at the 0.05 significance level).

For the fair process message group, the standardized parameter estimates showed that reading the fair process message was associated with higher positive affective reactions ($\beta$ = 0.32, p = 0.03) compared to the control message. This is consistent with H2. Positive affective reactions were positively associated with perceived benefit ($\beta$ = 0.21, p = 0.04) that was associated with purchase intentions ($\beta$ = 0.38, p = 0.02). This is consistent with H2, H3, and H4. Positive affective reactions were not negatively associated with perceived risk ($\beta$ = -0.08, p = 0.14), which was not significantly associated with purchase intentions ($\beta$ = -0.19, p = 0.07). This failed to support H5 and H6. Positive affective reactions had a significant borderline effect on reputation for distributive justice ($\beta$ = 0.29, p = .052). This is consistent with H7. Reputation for distributive justice was not associated with purchase intentions ($\beta$ = 0.24, p = 0.21), thus failing to support H8 in the context of process fair message. In contrast, positive affective reactions were positively associated with reputation for fair process ($\beta$ = 0.37, p = 0.01), which was positively associated with purchase intentions ($\beta$ = 0.31, p = 0.02), thus supporting H9 and H10 in the context of process fair message. The parameter estimates for the paths and bias corrected confidence intervals are reported in Table 9. The analyses also indicated a significant indirect relationship from positive affective reactions to purchase intentions through perceived benefits (standardized indirect effect = 0.11, SE = .05, p < .05). The parameter estimates for the direct and indirect path coefficients and bias corrected confidence intervals in the fair process model are reported in Table 9.

Table 9. Parameter Estimates for The Direct and Indirect Path Coefficients and 95% Bias Corrected Confidence Intervals In The Fair Process Model

| Path description | β | B | SE | 95%CI |
|---|---|---|---|---|
| **Direct path** | | | | |
| Fair process message → purchase intentions | .19[*][a] | .12 | .08 | [-.08, .45] |
| Fair process message → affective reactions | .32[*] | .29 | .05 | [.21, .63] |
| Affective reactions → purchase intentions | .10[*] | .07 | .03 | [.06, .39] |
| Affective reactions → perceived benefit | .21[*] | .17 | .10 | [.03, .27] |
| Perceived benefit → purchase intentions | .38[*] | .34 | .09 | [.09, .14] |
| Affective reactions → perceived risk | -.08 | -.05 | .02 | [-.79, -.42] |
| Perceived risk → purchase intentions | -.19 | -.22 | .10 | [-2.35, -49] |
| Affective reactions → reputation for DJ | .29[*][a] | .24 | .04 | [.08, 1.21] |
| Reputation for DJ → purchase intentions | .24 | .15 | .05 | [-.42, .93] |
| Affective reactions → reputation for FP | .27[*] | .22 | .07 | [.12, 3.67] |
| Reputation for FP → purchase intentions | .33[*] | .29 | .05 | [.06, 1.51] |
| **Indirect path** | | | | |
| Affective reactions → perceived benefit → purchase intentions | .08[*] | .11 | .04 | [1.12, 3.99] |
| Affective reactions → perceived risk → purchase intentions | -.02 | .03 | .01 | [-.42, .27] |
| Affective reactions → reputation for DJ→ purchase intentions | .06 | .04 | .02 | [-.01, 1.26] |
| Affective reactions→ reputation for FP → purchase intentions | .08[*] | .05 | .01 | [.02, 1.23] |

Note: DJ=Distributive justice; FP=Fair process. Subscript [a] denotes a borderline significant effect (at the 0.05 significance level).

A comparison of the path coefficients in the three models showed that distributive and fair process message had a significant relationship with positive affective reactions compared to the control model. This relationship was more pronounced in the fair process message compared to the distributive justice message. As such, the fair process message was associated with higher positive affective reactions which was associated with higher perceived benefit and higher assessment of Kellogg's reputation for fair process compared to the distributive justice and control messages. That is, fair process message was associated with higher affective reactions ($\beta$ = 0.32) compared to ($\beta$ = 0.13) in the distributive justice message. Detailed results are reported in Figure 3.

In the context of fair process message, positive affective reactions were associated with higher perceived benefits ($\beta$ = 0.38) compared to the distributive justice and control messages ($\beta$ = 0.19 and 0.12), respectively. In the context of fair process message, positive affective reactions were positively associated with higher reputation for distributive justice ($\beta$ = .29) compared to that in the distributive justice message ($\beta$ = 0.13) and control message ($\beta$ = 0.10). Further, positive affective reactions were positively associated with higher reputation for fair process ($\beta$ = 0.37) compared to that in the distributive justice message ($\beta$ = 0.24) and control message ($\beta$ = 0.18). Finally, it is important to note that reputation for fair process was significantly associated with purchase intentions in the fair process message only ($\beta$ = 0.31). Detailed results are reported in Figure 3.

Figure 3. Standardized parameter estimates for distributive justice and fair process models
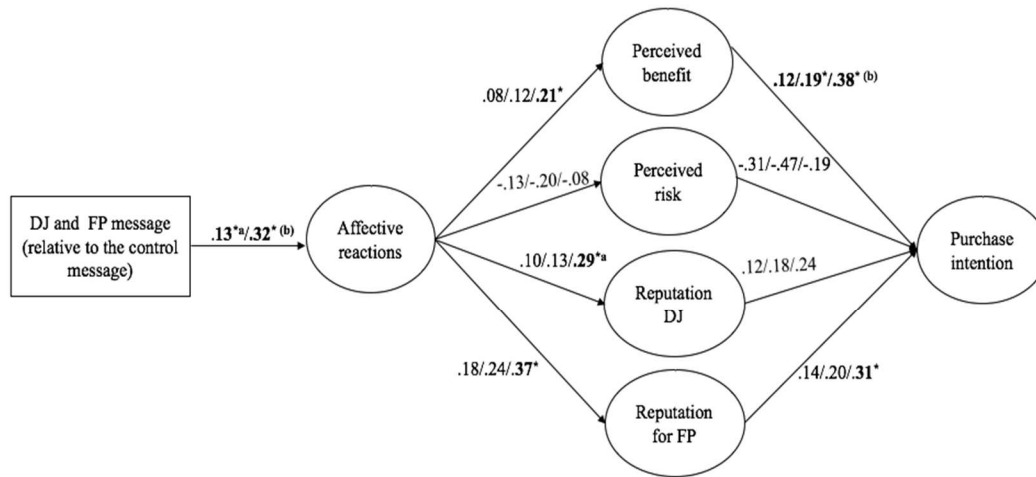


Note. DJ= Distributive justice, FP= Fair process
Control group serves as a reference group for the path coefficients from DJ and FP messages to affective reactions.
Significant path coefficients are in bold. Subscript [a] indicates a borderline significant effect (significance level of 0.05)
Subscript "b" to indicate a significant difference between the path coefficients

# CHAPTER FOUR: DISCUSSION

This study was motivated by five food companies' decisions to voluntarily label their GE foods announced by March 2016 (Scipioni, 2016). I explored the effect of using the four socio-psychological dimensions of organizational justice to describe companies' voluntary GE labelling decisions. Specifically, the goal was to examine the underlying mechanisms by which justice as justice might influence consumers' purchase decisions of GE foods. Towards this end, I designed labels that incorporated distributive, procedural, interpersonal, and informational justice and examined their effects on consumers' affective reactions, perceived risk, perceived benefits, evaluation of company's reputation for justice, and purchase intentions of GE food.

The results of this study showed that using messages that include justice can have a small effect on consumers' positive affective reactions ($n2p = 0.06$), perceived benefits ($n2p = 0.04$) and perceived reputation of fair process ($n2p = 0.02$). Specifically, fair process labelling was positively associated with higher positive affective reactions, higher perceived benefits, higher perceived reputation of fair process, and higher purchase intentions compared to the distributive justice message and the control message.

As expected, the study particularly showed the role of justice measures in eliciting positive affective reactions. That is, communicating a justice event (e.g., labelling GE foods) while emphasizing company's respect and care towards consumers evoked consumers' positive affective reactions that appeared to influence their subsequent risk/benefit perceptions and purchase intentions. This finding supports the contention that people's reactions to justice are not mere "cold cognitive" but "emotion laden" reactions (Barsky & Kaplan, 2007, p. 286). Relatedly, this finding is consistent with previous studies showing that positive affective reactions can be a consequence rather than an antecedent of people's perceptions of justice

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(Krehbiel & Cropanzano, 2000). As such, the positive affective reactions triggered by justice events can influence attitudinal (i.e., risk and benefit perceptions) and behavioral (e.g., purchase intent) outcomes. What's more, fair process (i.e., procedural, interpersonal, and informational justice) can influence people's positive affective reactions which in turn, can positively influence people's assessment of companies.

Our finding that fair process labelling is associated with higher positive affective reactions compared to distributive justice message can be interpreted in light of previous studies showing that people perceive authorities that consider their demands in the decision making process as neutral/unbiased, having good intentions, and respectful of others' rights (Lind & Tyler 1988; Tyler, 1994). This also emphasizes that the effect of procedural justice in enhancing people's feelings that they influence the outcomes by having control over the decision making process. In this regard, procedural justice (i.e., granting people the opportunity to express their opinion in decision making process) was found to be positively associated with positive emotions (Cobb & Frey, 1996) and favorable outcomes such as support and positive evaluations of authorities (Greenberg, 1987).

When it comes to distributive justice message, drawing on previous studies showing that distributive justice is a predictor of personal outcomes (e.g., Konovsky, Folger, & Gropanzano, 1987; McFarlin & Sweeney, 1992), I expected that the distributive justice message would be associated with higher affective reactions given the personal outcomes related to labelling GE foods (i.e., making informed consumption decisions). Contrary to expectation, the analysis showed that a small effect of distributive justice message on positive affective reactions compared to the control message ($n2p = 0.01$). One interpretation is that distributive justice emphasizes that labeling GE products is solely based on a company's decision to share the

benefits of GE with consumers (i.e., outcome reference). By contrast, fair process underscores

that GE voluntary labelling decision stems from a company's desire to listen, care, and respect

consumers (i.e., system reference). This finding also indicates that the process used to reach

decision outcomes often matters more than the fair distribution of outcomes (Lind &Tyler 1988).

This may suggest that choosing distributive justice to describe companies' voluntary GE

labelling decisions might not be an optimal approach. One suggested approach is therefore

that food companies describe the process by which they came up with the voluntary

labelling decision using procedural justice along with the benefits of using GE in food

production.

The findings also showed that the role of affective reactions in influencing people'

perceived benefits. This is compatible with the risk literature that emphasizes the role of

affect in increasing people's perceived benefits of novel technology in general (Alhakami

& Solvic, 1994) and GE products in particular (Townsend & Campbell, 2004). Our finding about

the mediating role of positive affective reactions and perceived benefits, and positive affective

reactions and perceived reputation of overall procedural justice can be explained by the affect

heuristic model and risk-as feeling hypothesis showing that people rely on their emotions in

making risk judgments. For example, Finucane and colleagues (2000) found that participants

who read a vignette about the risk of technologies (e.g., food irradiation) had a negative affect

towards these technologies, and thus evaluated them as high in risk and low in benefit.

Conversely, those who read a vignette about the benefits of technologies had positive affect

towards these technologies and evaluated them as high in benefits and low in risk.

In terms of the relationship between affective reactions and perceived risk, this study

found that positive affective reactions were negatively associated with perceived risk in the

distributive and fair process conditions but this association was not significant. Contrary to previous studies (Alhakami & Solvic, 1994), this finding failed to show the inverse relationship between positive affective reactions and perceived risk. Given that previous studies found that disgust and dread are the two negative emotions that consumers associate with GE food, one suggestion therefore is to examine whether justice dimensions can influence negative affective reactions, and subsequently decrease perceived risk.

In terms of company's reputation, this study showed the effect of positive affective reactions in influencing company reputation. One interesting finding is that the fair process message was associated with higher perceived reputation for distributive justice and reputation for fair process compared to the distributive justice message. One interpretation is that fair process (including procedural, interpersonal, and informational justice) served as a heuristic cue for distributive justice. As such, consumers who read the process fair message (portraying the labelling decision as a company's response to consumers' demands) might infer that Kellogg's wants to benefit its consumers rather than hurt them (i.e., distributive justice). Although the organizational justice literature examines how people use justice as a heuristic cue to make decisions about authorities (e.g., justice heuristic theory) including the order by which procedural and distributive information can influence justice judgments (Van den Bos et al., 1997), further examination is needed to unravel whether procedural justice can also serve as a heuristic cue for distributive justice.

The study contributes to the marketing literature in three ways. First, I extended the literature on corporate reputation by conceptualizing and operationalizing reputation as justice. To the best of our knowledge, it is the first academic study that incorporated justice research in marketing by showing that justice dimensions can help companies label their GE products,

thereby communicating product-related information to consumers. This study therefore responded to scholary calls (e.g., Greenberg, 2009) to examine organizational justice in a new area, namely company reputation. Second, I examined emotions as a consequence of a justice event (i.e., GE voluntary labelling), which contributes to the relatively few studies that have focused on positive rather than negative emotions. This has also extended research on the role of affect in risk communication by examining the relationship between justice and consumers' affective reactions in the context of GE foods. Third, unlike previous research on organizational justice that focused on internal stakeholders' attitudes (e.g., employees and managers),

I examined the effect of justice on external stakeholders by examining consumers' evaluation of company's reputation and purchase intentions.

Finally, I conducted mediational analysis to further examine the sequential effect of affective reactions, risk/benefit perceptions, and company's reputation on the relationship between food labels and purchase intentions of GE products. This is consistent with organization theories and models developed in recent years that include multiple mediators to represent the complexity of organizational decisions such as voluntary GE labelling. Furthermore, the inclusion of additional mediators makes the models less vulnerable to specification errors (Mathieu et al., 2008; Preacher & Hayes, 2008) and advance our knowledge of the factors that may influence consumers' buying decisions.

**Limitations and Future Studies**

The current study was not without limitations. First, as noted above, although I ultimately combined interpersonal and informational messages into procedural justice message based on a priori theoretical rationale, it is still important to find ways to communicate interpersonal and informational justice as distinct dimensions. In light of previous studies emphasizing the

differential effect of each justice dimensions on people's attitudes and behaviors (Colquitt, 2001; Clemmer & Schneider, 1996; Maritnez-Tur, Peiro, Ramos, & Moliner 2006), I would suggest that future studies try to develop and test marketing messages/labels pertaining to each justice dimension. Our evidence suggests that is not an easy task. It requires consideration of the limited space and content allowed on food labels. Although our pretest showed that the manipulation checks for interpersonal and informational justice on its associated measure of reputation for justice had small effect size ($n2p = 0.01$), the final analysis failed to do so. Therefore, it would be important to pretest multiple justice messages using larger sample from different pools.

Furthermore, the study was conducted using an Amazon Mechanical Turk (i.e., availability) sample, it will be important to test the justice models with more representative samples, and if possible, using different methodology. One suggestion would be to use direct observation in grocery store to examine consumers' willingness to buy GE products in real settings after reading justice messages. Future participant observational study can be conducted in selected grocery stores in both urban and suburban areas to detect consumers' buying behaviors rather than their buying intentions. This method also allows researchers to ask consumers questions after observing their buying behaviors (Wimmer and Stiles, 2001), which might help understand the effect of justice message on consumers' buying behaviors. Another research method is eye tracking technology to monitor consumer visual attention to justice messages and examine the parts of the justice message that consumers tend to focus on versus the parts they ignore. This would provide further insights about consumer use of justice labels and their effects on consumers' purchasing decisions.

Another limitation is that the study did not control for risk and benefit perceptions. Instead, it used them as dependent variables that are influenced by the justice messages rather

than antecedents of justice messages. Future studies therefore can use risk/benefit perceptions as controlling variables or moderators to examine their effects on the relationship between justice messages exposure and consumers' evaluation of companies' reputations, and purchase decisions. For example, it would be interesting to compare the effects of justice messages on consumers who think that GE food is high in risk and low in benefits versus those who think GE foods is low in risk but high in benefits, in addition to those who have ambivalent attitudes towards GE food. Future studies could also examine other moderators related to consumers' characteristics such as gender, education, health consciousness and food neophobia. It might, similarly, be helpful to conduct a latent class analysis to examine the effect of a set of consumers' individual characteristics on their responses to different GE labelling stimuli (Lanza & Rhoades, 2013).

Another limitation is that the study tested one product with one single exposure. It remains important to test the effect of using justice dimensions in labeling an assortment of other GE products that are currently in the market such as salmon and arctic apples. Relatedly, future studies could also use different formats (e.g., news article, news stories) that could allow for more lengthy, persuasive justice messages that describe companies' voluntary GE labelling decisions. It would be useful to examine the effects of detailed justice messages on consumers' emotional and cognitive evaluation of the risks and benefits of GE products, evaluation of companies' reputations, and subsequent purchase intentions.

From an impression management perspective, future research is also needed to examine the effect of company reputation for justice on eliciting consumers' positive affective reactions and influencing consumers' risk and benefit perceptions and purchase decision of GE products. Further, it would be useful to replicate the current study using the term genetically modified

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(GM) foods given that previous studies showed contradicting findings about the interchangeable usage of GE or GM terms. While some consumers associated GE with benefits, positive affect, and higher purchase decision compared to GM (Zahry & Besley, 2016), others favorably viewed GM as more natural compared to GE that has been produced by human (Philips & Hallman, 2013). This potential replication might help compare whether the choice of terms used to designate GE foods can influence consumer's assessment of company's reputation of justice.

Another important direction for future research can be to explore the effectiveness of justice dimensions in the context of food crisis management such as recalls of foods and outbreaks of foodborne disease. Understanding how companies can mitigate the effect of risk during crisis using the wealth literature of organizational justice would help companies to manage impression and communicate with consumers during crisis.

One related suggestion is to explore the effect of justice dimensions using narratives in branding conceptualizations. Further, our findings suggest further research can be pursued to determine the effect of using one justice dimensions versus a combination of two justice dimensions (e.g., procedural and informational) on consumers' affective reactions and companies' reputations.

The study offers some practical implications that can help consumers and companies as well. In essence, the study's ultimate goal was to find new ways to help food companies label their GE products so consumers can make informed purchase decisions. Knowing that the majority of food companies fear that mandatory GE labeling would warn consumers that GE products are unsafe (Grocery Manufacturers Association, 2012), our study suggests that companies can use procedural justice (including interpersonal and informational justice) to describe their GE voluntary decisions while positively portray themselves as fair entities that

listen to consumers' voices. Marketing managers therefore can consider justice dimensions as new approach to market GE labelled products.

To sum up, I tested my claim that organizational justice dimensions can be used to help companies communicate with consumers in the context of risk related issues such as GE products. This study showed that importance of fair process in eliciting positive attitudinal reactions including positive affective reactions and perceived benefits, in addition to behavioral intentions (i.e., purchase intentions).

**APPENDICES**

Figure 4. Control message, distributive justice message, interpersonal justice message, informational justice message

| Control Message | Distributive Justice Message |
|---|---|
|  |  |

Figure 4 (cont'd)

| Interpersonal Justice Message | Informational Justice Message |
|---|---|
|  |  |

## APPENDIX B. MODELS SPECIFICATION

**Model fit indices.** The most common index to measure model fit is the Chi-Square test ($\chi2$). A significant $\chi2$ test statistic would cast double on the model specification (Bollen & Long, 1993). However, $\chi2$ is not considered to be a very useful fit index by most researchers (e.g., Bentler, 1990) because it is affected by (1) sample size—larger samples produce larger $\chi2$ that are significant even with very small discrepancies between implied and obtained covariance matrices, and (2) model size also has an increasing effect on $\chi2$ values, thus models with more variables tend to have larger $\chi2$. Given that a model is an approximation of reality rather than an exact representation of the observed data (Bentler & Bonnett, 1980), it is advised that researchers use multiple different indices from different families of measures to provide convergent evidence of model fit instead of depending on $\chi2$ as a single measure of model overall fit (Bentler & Bonnet, 1980).

In this study, root-mean-square error of approximation residual (RMSEA), the square error of approximation residual (SRMR), The Tucker-Lewis index (TLI), and the comparative fit index (CFI) were reported. A value for the RMSEA of about 0.08 or less would indicate a reasonable error of approximation, and a value of about 0.05 or less would indicate a close fit (Browne & Cudeck, 1993). More recently, a cut-off value for RMSEA close to .06 (Hu & Bentler, 1999) or a stringent upper limit of .07 (Steiger, 2007) was recommended. The CFI and TLI range from 0 to 1.00, whereby a greater value indicates a better fit of the model to the data. A value of 0.9 of CFI and TLI has been proposed as a minimum for model acceptance (Bentler & Bonnett, 1980; Hu & Bentler, 1995). For the SRMR, values lower than .08 indicate well-fitting models (Hu and Bentler, 1999).

**Modification indices for measurement models.** Modifications indices (MIs) were used to guide our decisions to intercorrelate the residual invariance of observed indicators when the

baseline models were less than optimal fit. We respecified each model by including the common and unique parameters. based on two rationales: a) the substantial size of its MI values compared to other parameters, and the replication of these mispecified parameters across the three models. Respecification of each model was conducted by including one parameter at a time. The overall fit of the resultant models demonstrated adequate fit (tables 10-13) based on all fit indices that met or were close to meeting the recommended cut-offs (Hu & Bentler, 1999). It is important to note that although we found additional moderately large MIs, it was important to base the respecification decisions of the final model on the goodness of fit in combination with model parsimony (Byrne, 2011)

Results showed two large residual covariance contributed to the misfit across the control, distributive justice and fair process models. These items were: annoyed and angry; Kellogg's does what it wants, irrespective of what customers like me and Kellogg's cares about what consumers like me think. These items' residual covariance were: 48.14, 36.11 in the control model and 32.14, 29.78 in the fair process model, respectively. We found same pattern in the three models, albeit the effect appeared more pronounced in the distributive justice model showing residual covariance of 52.19 and 40.21 for annoyed and angry; Kellogg's does what it wants, irrespective of what customers like me and Kellogg's cares about what consumers like me think, respectively. In addition to these common mispecified parameters across the three models, we observed mispecified parameters unique to each model.

Accordingly, we respecified each model by including the common and unique parameters. The rationale for the inclusion of the unique parameters was the substantial size of its MI values compared to other parameters whereas the decision to include the common parameters was based on the replication of these mispecified parameters across the three models.

Table 10. Values of Selected Fit Statistics for Two-Step Testing of A Structural Regression of Control Model

| Model | $\chi^2$ | df | p | CFI | TLI | RMSEA | SRMR |
|---|---|---|---|---|---|---|---|
| **Measurement model** | | | | | | | |
| Standard CFA | 1005.507 | 650 | .00 | .92 | .89 | .065 | .052 |
| Respecified model<br>    Annoyed ↔ angry | 999.865 | 619 | .00 | .94 | .91 | .060 | .050 |
| Respecified model<br>    Kellogg's does what it wants<br>    ↔ Kellogg's cares about what consumers like me think | 997.095 | 601 | .00 | .96 | .93 | .055 | .045 |
| <u>Structural equation model</u><br>    Overidentified structural model (Eight paths) | 1577.095 | 640 | .00 | .96 | .95 | .056 | .052 |

Table 11. Values of Selected Fit Statistics for Two-Step Testing of A Structural Regression of Distributive Justice Model.

| Model | $\chi^2$ | df | p | CF | TLI | RMSEA | SRMR |
|---|---|---|---|---|---|---|---|
| <u>Measurement model</u> | | | | | | | |
| Standard CFA | 1143.458 | 645 | .00 | .92 | .88 | .069 | .071 |
| Respecified model | 1139.821 | 637 | .00 | .93 | .90 | .063 | .071 |
|     Annoyed ↔ angry | | | | | | | |
| Respecified model | 1127.320 | 621 | .00 | .94 | .91 | .057 | .067 |
|     Kellogg's does what it wants ↔ Kellogg's cares about what consumers like me think | | | | | | | |
| Respecified model | 1123.491 | 611 | .00 | .95 | .93 | .051 | .062 |
|     Kellogg's decision will bring benefit to customers like me ↔ Kellogg's decision will hurt customers like me | | | | | | | |
| <u>Structural equation model</u> | | | | | | | |
|     Overidentified structural model (eight paths) | 1589.095 | 539 | .00 | .96 | .95 | .051 | .058 |

Table 12. Values of Selected Fit Statistics for Two-Step Testing of A Structural Regression of Fair Process Model.

| Model | $\chi^2$ | df | p | CFI | TLI | RMSEA | SRMR |
|---|---|---|---|---|---|---|---|
| Measurement model | | | | | | | |
|   Standard CFA | 1543.458 | 545 | .00 | .88 | .90 | .069 | .073 |
| Respecified model | | | | | | | |
|   Happy ↔ Content | 1539.742 | 535 | .00 | .92 | .91 | .061 | .069 |
| Respecified model | | | | | | | |
|   Kellogg's does what it wants ↔ Kellogg's cares about what consumers like me think | 1521.014 | 530 | .00 | .94 | .93 | .051 | .060 |
| Respecified model | | | | | | | |
|   Kellogg's decision will bring benefit to customers like me ↔ Kellogg's decision will hurt customers like me | 1518.231 | 510 | .12 | .96 | .95 | .046 | .057 |
| Structural equation model | 1610.568 | 564 | .00 | .97 | .95 | .044 | .048 |
|   Overidentified structural model (eight paths) | | | | | | | |

## APPENDIX C. TESTING MODELS

Nested models. I tested a sequence of nested models that ranged from an unconstrained model with the parameters freely estimated across groups (i.e., conditions) to more parsimoniously nested models that include different levels of equality constraints (Kenny, 2002). The following models were analyzed:

Model 1: unrestricted model: non-invariant, unconstrained model

Model 2: measurement equivalent model: equal factor loading across the groups

Model 3: model 2 constraints plus equal factor variance and covariance

Model 4: model 3 constraints plus equal paths;

Model 5: model 4 constraints plus equal factor residuals ('fully constrained').

**Testing the equivalence of variances and covariance, residual invariances, and latent factor means.** The equality of variances and covariance were specified in model 2 because the other constraints rely on assumptions of invariant measurements. Model 4 and 5 referred to the latent construct that dealt with more substantive hypotheses about how the groups might differ and are similar, respectively, regarding the variables' relationships. Therefore, the most parsimonious model that varied not significantly from the unrestricted model was examined in comparing the paths and the latent means (Byrne, 2001). To validate the assumptions that groups were equivalent, groups should have identical estimates for all parameters (a 'fully constrained' model). Differences among the groups were evaluated for their appropriateness by 'freeing' special parameters (i.e., allowing the groups to vary).

The theoretical model was separately applied to each group and then the invariance analyses were conducted. Before the invariance models were estimated, I established that the model without any invariances (i.e., a model that is different in each group) was reasonable. This model was used as a basis of assessment of more constrained models. The constraints were

placed in a sequence of nested models. To compare the models, the χ2 difference test and the

Tucker-Lewis Index (TLI) were used to test the equality constraints (Byrne, 2001; Kenny, 2002).

To test the significance of paths and differences across the three groups, $p \leq .10$ was used

because unidirectional hypotheses where stated.

**Testing the multi-group invariant factorial structure of the measuring instruments.**

To determine whether (1) the items comprising a particular measuring instrument operated

equivalently across the different groups, and whether (2) the factorial structure of the instruments

was equivalent across groups, a confirmatory factor analysis was computed. This test of the

validity of the measurement model was done with a three-group model in which no constraints

were set. To compared the constrained models with unconstrained models (model 1), nested

models were computed. The constrained models were specified with equal factor loadings

(model 2) and equal factor loadings along with covariance (model 3). Detailed results are

presented in Table 13.

Table 13. Tests for Invariance across The Control, Distributive Justice, and Fair Process Model. Summary of Model Fit and Difference Test Statistics

| Model | MLM $\chi^2$ | df | CFI | TLI | RMSEA | SRMR | Model comparison | MLM $\chi^2$ | df | p |
|---|---|---|---|---|---|---|---|---|---|---|
| Configural model:<br>Model 1 (No constraints) | 3638.29 | 1787 | .96 | .924 | .051 | .065 | - | - | - | - |
| Measurement parameters | | | | | | | | | | |
| Model 2<br>All factor loadings invariant | 3661.31 | 1809 | .96 | .957 | .054 | .064 | 2 versus 1 | 22.79 | 22 | NS |
| Model 3<br>All factor loading invariant except for the unique parameters and common residual covariance invariant | 3658.92 | 1821 | .958 | .96 | .043 | .069 | 3 versus 2 | 10.39 | 12 | NS |
| Structural parameters | | | | | | | | | | |
| Model 4: model 3 constraints plus equal paths | 3772.79 | 1828 | .94 | .93 | .049 | .073 | 4 versus 3 | 17.54 | 7 | |
| Model 5: model 4 constrained plus equal factor residual | 3688.56 | 1831 | .95 | .92 | .058 | .080 | 5 versus 4 | 23.33 | 10 | |

The analyses showed that the first two constrained models had good model fit. Further, the analyses showed the equivalence between the configural model and model 2.

Computation of the difference test scaling correction and Satorra-Bentler scaled $\chi 2$ difference test are presented below.

*Model 2 versus configural model*

a) Compute the difference test scaling correction

$cd = (d0 * c0 - d1*c1)/(d0 - d1)$

$cd = 1787 *1.28 - 1809.1.28/28$

$cd = 2287.36 - 2315.52/28$

$cd = 28.16/28 = 1.01$

$cd = 1.01$

b) compute Satorra-Bentler scaled chi square difference test TRd

$TRd = (T0*c0 - T1*c1)/cd$

$TRd = 3638.29 - 3661.31/1.01$

MLM $\chi^2_{(28)} = 22.79$, p >.05

**Testing invariance of residual covariance.** Computation of the difference test scaling correction and Satorra-Bentler scaled $\chi 2$ difference test showed that Model 3 was not statistically significant different from model 2, which confirmed that models 2 and 3 accounted as well for the sample's variance/covariance as model 1. Computation is presented below.

*Model 3 versus Model 2*

a) Compute the difference test scaling correction

$cd = (d0 * c0 - d1*c1)/(d0 - d1)$

$cd = 1821*1.27 - 1809*1.28 /12$

cd = 2312.67- 2315.52/12

cd = 2.85/12=.23

b) Compute Satorra-Bentler scaled chi square difference test TRd=

TRd = 3661.31-3658.92/.23

TRd = 3.39/.23=10.39

MLM $\chi^2$ (12) = 10.39, p > 0.05

**Testing invariance of latent factors means.** The previous analyses showed that all factor loadings and covariance were invariant across the three groups, the assumption for the latent mean invariance (with invariant factor

loadings) was therefore examined. By restricting the means in one group, this group operated as a reference group against which the latent means of the other groups were compared. The control label group served as the reference group. Analyses showed a significant difference in means across the three groups. Computation is presented below.

1. *Testing invariance of means in the distributive justice and control groups*

   a) Compute the difference test scaling correction

   cd = (d0 * c0 - d1*c1)/(d0 - d1)

   cd = (1828*1.29 - 1821*1.27)/7

   cd = 2358.12– 2312.67/7

   cd= 45.45/7 = 6.49

   b) compute Satorra-Bentler scaled chi square difference test TRd

   TRd = (T0*c0 - T1*c1)/cd

   TRd = 3772.79-3658.92=113.87/6.49 =17.54

   MLM $\chi^2$ (7) = 113.87/6.49

MLM $\chi 2$ (7) =17.54, p < 0.01

2. *Testing invariance of means in the fair process and control groups*

   a) Compute the difference test scaling correction

   cd = (d0 * c0 - d1*c1)/(d0 - d1)

   cd = (1831*1.27 - 1821*1.27)/10

   cd = 2325.37 – 2312.67/10

   cd = 12.70/10 =1.27

   b) Compute Satorra-Bentler scaled chi square difference test TRd

   TRd = (T0*c0 - T1*c1)/cd

   TRd = 3688.56-3658.92 = 29.64

   MLM $\chi 2$ (10) = 29.64/1.27

   MLM $\chi 2$ (10) = 23.33, p <.005

3. *Testing invariance of means in the fair process and distributive justice groups*

   a) Compute the difference test scaling correction

   cd = (d0 * c0 - d1*c1)/(d0 - d1)

   cd = 1824* 1.28 - 1821*1.27/3

   cd = 2334.72– 2312.67/3

   cd =22.05/3 = 7.35

b) compute Satorra-Bentler scaled chi square difference test TRd

TRd = (T0*c0 - T1*c1)/cd

TRd = 3775.49-3658.92=116.57

MLM $\chi 2$ (3) =116.57/7.35

MLM $\chi 2$ (3) = 15.85, p

# APPENDIX D. TESTING STRUCTURAL PATHS

**Testing the equivalence of structural paths across groups.** Prior to the multi group analyses, we tested the structural model in each group separately because if the hypothesized model was adequate in all groups, it may work well in the multi-group analyses. Detailed results are reported in Table 11.

From a statistical point of view, it could be maintained that the constraints of model 3 provides the best fit model. The $\chi 2$ difference test and the TLI indicated that this model did not differ significantly from the unconstraint models. Therefore, the paths in this model were estimated. Constraining the structural parameters to be equal across the three models resulted in a statistically significant worsening of overall model fit MLM ($\chi 2$) = 3772.72, df =1828, CFI = .91, TLI = .91, RMSEA = .069, SRMR = .073, rejecting the null hypothesis that the paths (as a whole) are the same across the three models.

I tested the hypothesis that the eight structural paths were unique (not invariant) across the three models. Each path was tested for its equivalence across the three groups by adding a nonlinear constraint in the model such that the strengths of the direct and mediation effects being compared are constrained to be equal (Byrne, 2012; Hayes & Preacher, 2014). Guided by Byrne's structural paths analyses (Byrne, 2011), I analyzed the invariance in individual coefficient paths across the three groups by comparing the individual paths in the control and distributive justice groups, followed by comparing the paths in the control and fair process groups, and finally, we compared the paths in the distributive justice and fair process groups. Further, I used Wald $\chi 2$ difference test Wald to specify and compare the indirect effects.

The final optimal model, model 3, was tested, with constrained factor loadings, factor covariance, and structural paths to be equal across the three groups. Significance testing was done using 95% bias corrected (BC) confidence intervals generated from 1000 bootstrap sample

for both direct and indirect effects (Cheung & Lau, 2008; Hayes & Preacher, 2014). The direct and indirect effects were estimated using maximum likelihood (Hayes & Preacher, 2014).

**Testing the equivalence of individual structural paths across groups.** I tested the hypothesis that the nine structural paths were unique (not invariant) across the three models. Each path was tested for its equivalence across the three groups by adding a nonlinear constraint in the model such that the strengths of the direct and mediation effects being compared are constrained to be equal (Byrne, 2012; Hayes & Preacher, 2014). The $\chi2$ statistic values of the unconstrained and constrained models are then compared using Wald $\chi2$ difference test (Muthén, 2011). Guided by Byrne's structural paths analyses (Byrne, 2011), we analyzed the invariance in individual coefficient paths across the three groups by comparing the individual paths in the control and distributive justice groups, followed by comparing the paths in the control and fair process groups, and finally, I compared the paths in the distributive justice and fair process groups. Further, I used Wald $\chi2$ difference test Wald to specify and compare the indirect effects.

The final optimal model, model 3, was tested, with constrained factor loadings, factor covariance, and structural paths to be equal across the three groups. Significance testing was done using 95% bias corrected (BC) confidence intervals generated from 1000 bootstrap sample for both direct and indirect effects (Cheung & Lau, 2008; Hayes & Preacher, 2014).

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