



## HOW CAN UNFAVORABLE INFORMATION BE MINIMIZED? IMPRESSION MANAGEMENT AND ORDER EFFECTS IN AN EXPERIMENTAL APPROACH

Área de investigación: Contabilidad, Auditoría y Costos

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XXII  
CONGRESO INTERNACIONAL DE  
CONTADURÍA, ADMINISTRACIÓN  
E INFORMÁTICA

## HOW CAN UNFAVORABLE INFORMATION BE MINIMIZED? IMPRESSION MANAGEMENT AND ORDER EFFECTS IN AN EXPERIMENTAL APPROACH<sup>\*1</sup>



### Abstract

This paper aims to analyze how information can be manipulated to create the desired image of a company. By using an experimental design, we considered the use of impression management and optimal order by preparers of financial information to disclose information. Based on assumption that people would be more sensitive to unfavorable rather than to favorable information (Kahneman & Tversky, 1979), this research hypothesizes that impression management and optimal order disclosure attenuate the impact of unfavorable information on investors' judgments. The findings show that, although the different groups have shown scrutiny time of information and propensity to invest values directed to which hypothesis described, there were not statistically significant among the effects investigated. However, subjects that have learned favorable information first classified the company as more constant. In addition, managed information influenced subjects to consider the company more confident and solid.

**Keywords:** impression management, optimal order, information process, decision-making.

### 1. Introduction

This research aims to investigate how accounting information can be manipulated to create the desired image of a company. The theoretical constructs of our analysis can be observed in the predictive validity model (Figure 1). The upside of Figure 1 shows the conceptual model used in this research and the downside one show how conceptual variables will be operationalized. In that model, preparers of information seek to create the desired image in two ways: first, by using what is called 'impression management' in accounting literature; second, by presenting favorable and unfavorable information in an "optimal" order sequence. Such variables have

\* We would like to express our thanks to the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for its support.

Queremos expresar nuestro agradecimiento al Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) por su apoyo.

<sup>1</sup> This current paper is a continuation of an earlier version already presented as a Thesis Proposal at the XVII National Congress of Administration and Accounting (AdCont), held in Brazil in 2016. In that occasion, it was presented just the theoretical framework and hypotheses because we had not collected any data yet. For this reason, parts of the text contain the auto quote Moreira & Cardoso (2016).

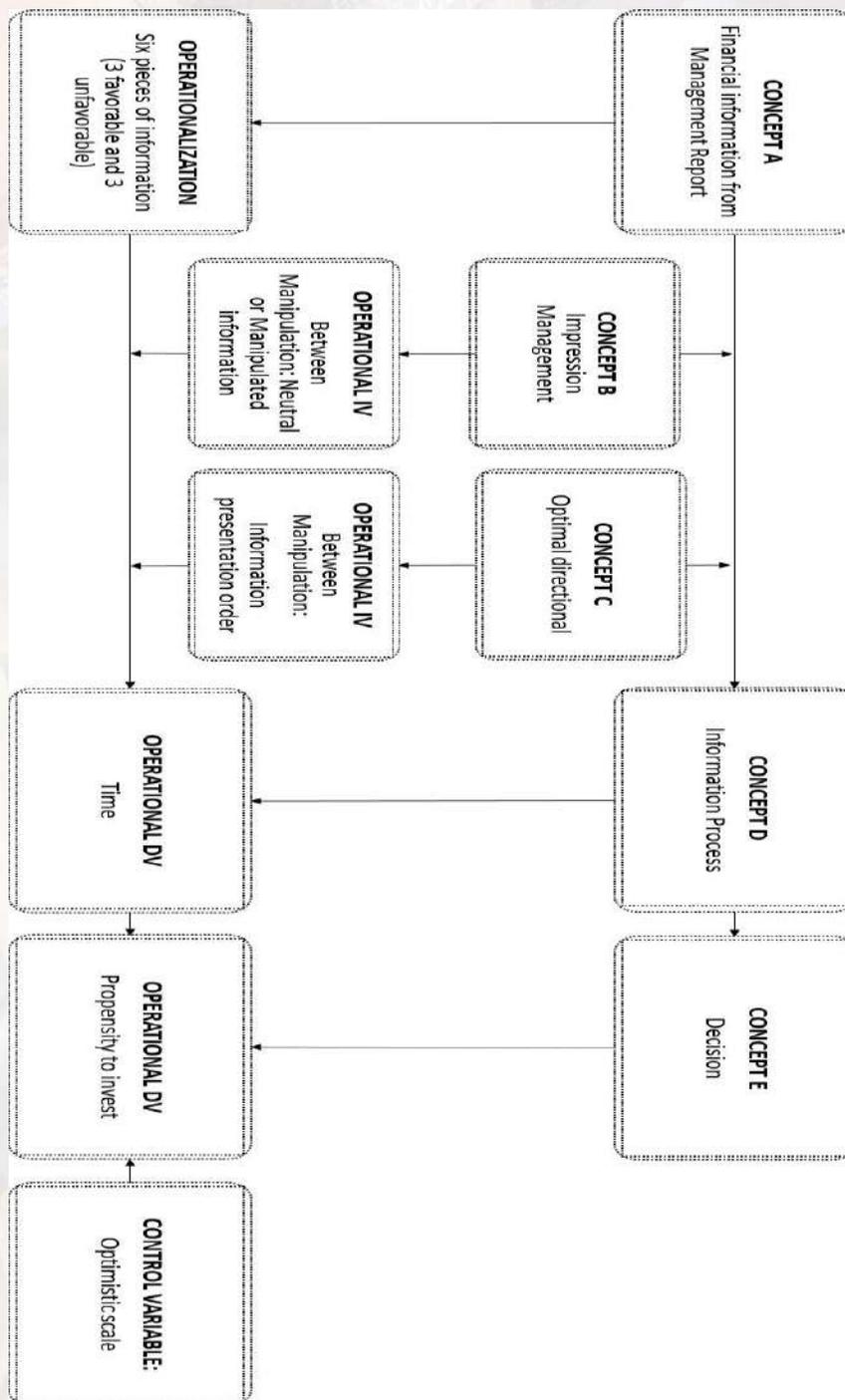
the function of minimizing unfavorable information while the good news is emphasized.

It follows that “a single number creates the appearance of certainty when it does not exist” (Beaver, 1991, p. 5). Investors observe the information reported by preparers via financial reporting, but that desired image from preparers is still not enough for investors to make a decision. Therefore, investors create their own image based not only on the information they received but also on their expectations and psychological biases. “The attempt to create a desired image or a better impression occurs due to the existing environment of uncertainty in the market” (Moreira & Cardoso, 2016).

Based on the framework used in this study, impression management occurs when preparers try to emphasize favorable information or obfuscate unfavorable information. Additionally, this study investigated whether an optimal order factor in order to disclose information might be a strategy of impression management as well.



**Figure 1**  
*The predictive validity model of research (framework)*



There are two different explanations of what the optimal direction to disclose information is. First, Legg and Sweeny's (2014) assumption that delivering bad news before good news reduces people's negative emotions and therefore it is preferred by news recipients. Secondly, there is the halo effect — or the influence of a global evaluation — on evaluations of individual attributes, wherein the first impression has a bigger impact than the last impression (Asch, 1946). Thereby delivering favorable information first and unfavorable after is the optimal direction.



Preferences of the order of given information have been researched in the field of psychology (Legg & Sweeny, 2014; Ross & Simonson, 1991) but there are few studies involving the order of given information on financial reports disclosed by companies. Some researchers suggest that the halo effect affects decision-making in the capital market (Coombs & Holladay, 2006; Harrison & Freeman, 1999; Hirshleifer, 2001), but none of them conducted an empirical analysis of such an impact. Based on the results of this paper, this issue will be addressed.

This research contributes to both accounting and psychology literature with the presentation of financial reporting as well as the influence of investors' biases on information acquisition and evaluation of accounting information. Some implications can be made about our findings. First, information from the Management Discussion & Analysis (MD&A) can determine investors' judgments, and unfavorable information in these reports leads investors to evaluate the company more negatively. Second, impression management strategy by preparers is able to minimize the impact of unfavorable information. Third, little attention has been given to the order of disclosing information. Our results show that such order matters and preparers can use an optimal order to disclose information about the company.



## 2. Background and hypotheses

### 2.1 Favorable or unfavorable accounting information

Classical economic theory, as developed, is based on the idea of the *homo economicus* that is perfectly rational. That man is able to analyze all available information and consider all possibilities to solve the problem. Consequently, the market for equity should be driven by public information (Barberis & Thaler, 2003; Breitzkreuz, 2008; Halfeld & Torres, 2001). Finance theories such as the Efficient Market (Fama, 1970) and Modern Portfolio (Markowitz, 1952) are established on the idea that all data are fully and immediately reflected in the stock price.

However, a number of market anomalies began to occur more frequently and they cannot be explained by traditional finance model (Halfeld & Torres, 2001). In this context, behavioral finance emerges as an attempt to improve the traditional model of finance by introducing the idea that rationality is not the



guideline of human thought. It argues that some financial phenomena can plausibly be understood using models in which some agents are not fully rational (Barberis & Thaler, 2003). Behavioral finance has the cognitive psychology as one of its bases. There is an extensive experimental evidence in psychology literature documenting biases that arise when people form beliefs and make decisions (Barberis & Thaler, 2003; Ritter, 2003).



Simon (1955) proposed much earlier that decision makers should be viewed as boundedly rational in which decisions are made for obtaining a satisfactory result, which is not necessarily the decision that maximizes their results but solves an issue. Kahneman and Tversky have been among the main authors in behavioral approach and their research has attempted to obtain a map of bounded rationality. In summary, they have explored heuristic and biases (Kahneman & Tversky, 1973; Tversky & Kahneman, 1974); prospect theory and loss aversion (Kahneman & Tversky, 1979; Tversky & Kahneman, 1991, 1992); and framing effects (Tversky & Kahneman, 1981, 1986)

Psychological and organizational behavior researches have shown that people respond differentially to positive and negative stimuli, and negative events tend to generate stronger behavioral responses than positive events (Barsade, 2002; Cacioppo, Gardner, & Berntson, 1997; Rozin & Royzman, 2001). Negative event is defined as one that has the potential or actual ability to create adverse outcomes for the individual, regardless of the fact that these events have or not occurred (Taylor, 1991).

Kahneman & Tversky (1979) wrote an article called “Prospect Theory: An Analysis of Decision under Risk” which describes several classes of choice problems in which preferences systemically violate the axioms of expected utility theory and propose an alternative account of choice under risk. “The authors call it the ‘reflect effect’: a loss of nine hundred dollars has a subjective value greater than 90% chance to lose one thousand dollars. A certain loss is aversive and it tends to drive us at risk. In general, people are favorable at risk when all other options are worse” (Moreira & Cardoso, 2016).

Psychological literature in motivated reasoning shows that directional preferences influence not only the decisions people make but also how information is processed. Individuals often accept information that is consistent with their preferences and they tend to accept the information without thinking about it deeply while they tend to spend more cognitive effort scrutinizing information that is inconsistent with their preferences (Ditto & Lopez, 1992; Hales, Kuang, & Venkataraman, 2011).

## 2.2 Impression Management

Impression management has been studied in the psychological field for a long time (also called self-presentation) (Felson, 1978; Gergen, 1965; Quattrone & Jones, 1978). According to Leary & Kowalski (1990), people regularly monitor



their impact on others and try to gauge the impressions other people form of them simply to ensure that their public persona is intact. On the other hand, under certain circumstances, people become motivated to control the way others see them; such motivation is a key to apply impression management.

Impression management has been treated by accounting researchers as a mechanism used by managers to manipulate impression that stakeholders have about their companies. According to Jones (2010), impression management involves managers influencing the financial reporting in their favor. This does not imply in a fraud and it is normally associated with the presentational aspects of reporting such as accounting narratives, graphs, and photographs.

Among different companies' financial reports, the MD&A is not audited, which allows preparers to freely use different tones, scales on graphs, approaches to present good or bad news. In other words, the MD&A could be used by managers to present news selectively, skewing the accounting narratives or using graphs to favorable aspects and downplay unfavorable results. Notice however that financial statements and the notes, although audited, are not necessarily free from impression management.

“Jones (2010) explains that accounting narratives, graphs, and photographs can be used in impression management. There are many researchers who have concentrated on graph distortion analysis (Beattie & Jones, 1999, 1992, 2000; Cho, Michelon, & Patten, 2012; Tang, Hess, Valacich, & Sweeney, 2014) or photographs (Bernardi, Bean, & Weippert, 2002; McKinstry, 1996). In accounting narratives, managers often: (i) stress the positive (good news), downplay the negative (bad news); (ii) baffle the readers conveying good news into more easy-to-read way than bad news; (iii) report strategies differently; (iv) attribute good news to themselves, but bad news to the environment” (Moreira & Cardoso, 2016).

“Clatworthy & Jones (2003, 2006) investigated differences in reporting between good and bad news and they found a tendency in unprofitable companies to overlook their strategic financial performance indicators in discretionary reports and instead distracted the readers' attention to future planning” (Moreira & Cardoso, 2016). “Tan, Ying Wang, & Zhou (2014) examined how the effect of language sentiment differs with readability and investor sophistication level. Their findings show that language sentiment influence investors' judgments when readability is low, but not when readability is high” (Moreira & Cardoso, 2016).

“Hales et al. (2011) investigate the effect of vivid (pallid) language on investor judgments; they found that vivid language significantly influences the judgment of investors who hold contrarian positions (short or long investors). Huang et al. (2014) investigate whether and when firms manage the tone of words in earnings press releases, and how investors react to tone management; overall,



the evidence is consistent with managers using strategic tone management to mislead investors about firm's outcomes" (Moreira & Cardoso, 2016).

"Our purpose is to analyze how investors react to the impression management made by preparers. Firstly, by facilitating the language used so to make favorable information better understood and by making it harder for the unfavorable news. Secondly, by attributing favorable information to the company and unfavorable information to the environment" (Moreira & Cardoso, 2016).



**Hypothesis 1a:** Impression management minimizes the impact of unfavorable information, then investors spend less time to scrutinize manipulated information than neutral information.

**Hypothesis 1b:** Impression management minimizes the impact of unfavorable information, then it increases the propensity to invest.

### 2.3 Optimal order

Does news order matter? Could the order of disclosing financial information change an investor's decision? Some researchers say that order matters because it can determinate receptors' behavioral responses to information (Asch, 1946; Kahneman, 2011; Legg & Sweeny, 2014; Marshall & Kidd, 1981). This research focuses on two possible explanations for the optimal direction to disclose information. The first explanation involves the directional halo effect, wherein the first impression has more impact than the last impression (Asch, 1946; Kahneman, 2011). The second explanation is Legg and Sweeny's (2011) assumption that delivering bad news before good news is preferable. Both explanations are described below in greater detail, beginning with the halo effect.

"You never get a second chance to make a good first impression." Keeping this age-old proverb in mind, it is true that when we like someone, we often assume that the person's attributes, which we know little of, are also favorable, and we tend to believe other attributes we do not know are favorable too. "Halo effect is defined as the influence of a global evaluation on evaluations of individual attributes of a person, but this definition is imprecise with respect to the strength and character of the influence" (Nisbett & Wilson, 1977, p. 250).

Asch (1946) describes halo effect with the following example:

*We look at a person and immediately a certain impression of his character forms itself in us. A glance, a few spoken words are sufficient to tell us a story about a highly complex matter. We know that such impressions form with remarkable rapidity and with great ease. Subsequent observation may enrich or upset our first view, but we can no more prevent its rapid growth than we can avoid perceiving a given visual object or hearing a melody. (p. 258)*



“This effect is one of the oldest and most widely known in psychological phenomena, but little is known about its nature, according to Thorndike (1920), who named the phenomena. Asch (1946) was one of the first who studied how the impression of someone’s character forms itself in us after we look at such person for the first time. The author analyzed the forming of impression more carefully by making several numbers of experiments using the halo effect concept” (Moreira & Cardoso, 2016).



In one of his experiments, “Asch (1946) analyzed if the direction in which characteristics are presented can change impressions. In Asch’s sixth experiment, he questions if it is possible to change impression without changing a particular characteristic. The author presented to two different groups of subjects characteristics of an individual. The two series of characteristics presented to subjects are identical, differing only in the order of succession of the latter. Series A opens with qualities of high merit and ends with dubious quality (e.g.: intelligent – industrious – impulsive – critical – stubborn – envious). This order is reversed in Series B. After presented the characteristics, the author instructed the groups to comment about the individual” (Moreira & Cardoso, 2016).



“Results from that experiment showed that subjects of the group A reported the individual as much more favorable than the second one (group B). Traits placed at the beginning of the sentence change the meaning of traits placed in the end. Furthermore, halo effect works as an “illuminative” to ambiguity, for example, considering that adjective stubborn (headstrong/determined) is ambiguous, it will be interpreted to be coherent into context” (Moreira & Cardoso, 2016).



“The sequence of presentation matters, because halo effect increases the weight of first impressions to the point that subsequent information is largely wasted. In addition, our system two is lazy and we do not need more information than necessary (Kahneman, 2011). Nisbett & Wilson (1977) found that global evaluations of a person could induce altered evaluations of the person’s attributes, even when there is sufficient information to allow for independent assessments of them” (Moreira & Cardoso, 2016).

“We suggest that the halo effect can be used by preparers of financial reports to create a better image about reality to information’s users. In this way, we argue that the halo effect can be considered as a way of impression management” (Moreira & Cardoso, 2016).



“Moreover, the halo effect is seen in many cases as the first impression that one has over the other, and how this first impression, or global impression, shapes impression about other characteristics. So, there is a weakness in our initial analysis, as when one considers, for example, investors in an active market, it must be considered that companies are already known, then the first impression is not formed by the current accounting information. On the other hand, some marketing research has found that the halo effect exists in relation to a new

product even when the company is already known for a long time on the market (Chernev & Blair, 2015; Coombs & Holladay, 2006). Like this, we believe that investors also have impressions of the current situation of the company, regardless if companies are already known” (Moreira & Cardoso, 2016).

“Halo effect is a quite broad concept, but on this paper, we conceive it as the phenomena of presenting favorable (unfavorable) characteristics before unfavorable (favorable) ones aiming to impact the impression receivers form about the subject being described, a directional factor. It is quite plausible to imagine halo effect as a type of impression management because somehow, positive information is being stressed and the negative one is downplayed. However, for the purpose of this work, halo effect will be a variable concerning the presentation order, while the way accounting narratives are shaped will be treated as an impression management construct” (Moreira & Cardoso, 2016).

A further concern is how to distinguish halo effect from other judgment heuristics as the availability heuristic or the representativeness heuristic. Judgment heuristics are the processes that help us find answers by simplifying the question to be answered. Such simplifications are done by replacing a hard question by another easy one. Heuristics, in general, are quite useful in decision-making but sometimes they lead to errors (Kahneman, 2011; Tversky & Kahneman, 1974).

The availability heuristic is the tendency to assess the probability of a certain type of event, based on how easily examples of such events can be brought to mind. For example, when an event has big media coverage people believe that chances of that happen again are higher (Tversky & Kahneman, 1974). Therefore, although we have used real information from a Brazilian company, we took care of not using information that would reveal the company for the subjects.

The representativeness heuristic was identified as estimating the probability of an event based on the information representativeness’ available and tailoring the estimate to a pre-conceived stereotype (Tversky & Kahneman, 1974). Despite being close, we believe it differs from the concept of halo effect, which would build a broad picture based on fragments of evidence. In addition, we have tested only the directional factor of the halo effect in our research, different groups of participants will receive the same information in different orders.

“Halo effect depends on the context where features are presented, for example, always placing good news at the beginning and bad news at the end. Our intention is to investigate how investors perceive information disclosed by preparers. Consequently, we also intend to investigate how the directional halo effect, together with impression management, moderates relationship between (un)favorable information and information process” (Moreira & Cardoso, 2016).



**Hypothesis 2a:** The directional halo effect decreases the impact of unfavorable information on scrutinizing time and propensity to invest.

**Hypothesis 2b:** The combined effect of the directional halo effect and impression management decreases further the impact of unfavorable information on scrutinizing time and propensity to invest (Moreira & Cardoso, 2016).

**Hypothesis 2c:** Frequency of favorable adjectives given to the companies by the participants is greater when the information is managed or when the favorable information is delivered first.

As an alternative explanation to the halo effect, some authors argue that news-recipients prefer to have a negative outcome (i.e. unfavorable information) before they receive a positive outcome because people tend to prefer improving sequences of events — sequences that are more positive or less negative (Legg & Sweeny, 2014; Ross & Simonson, 1991). In this case, having preferences to receive unfavorable information first places a premium on their affective response to the news (Legg & Sweeny, 2014).

Results from studies by Legg & Sweeny (2014) indicate that 78% of recipients wanted to hear the bad news first, and their explanations show that most recipients prefer to end with good news to reduce negative emotions. Nevertheless, only a few recipients described their preferences to receive bad news last as a way to motivate behavior change. These results show the difficulty involved in changing the *status quo*. A preference for receiving good news last can be explained by loss aversion bias (Ross & Simonson, 1991). In this way, the next information is always compared with the previous information, as a reference point, and a deteriorating sequence would be more impactful than an improving sequence.

Hypothesis 2d below is a concurrent explanation to H2a and H2b. On the one hand, by applying the halo effect, it is expected that favorable information presented first would generate less discomfort. On the other hand, by applying the order preference Legg & Sweeny's explanation, it is expected that favorable information presented in the end would generate less discomfort.

**Hypothesis 2d:** Presenting favorable information at the end decreases the impact of unfavorable information on scrutinizing data and increases the propensity to invest.

### 3. Methodology

We used an experimental design with randomization of subjects into six different groups. We have employed a 2x3 between-participants design that manipulates (1) the impression management condition and (2) the optimal order condition. Participants were required to analyze financial reports from a



hypothetical public company. Firstly, all participants received six pieces of information from MD&A<sup>2</sup>. Secondly, subjects could see a set of financial reports about the company. After analyzing information, subjects answered their propensity to invest in that company's stock. Finally, they concluded the task by completing a post-experimental questionnaire that included a manipulation check, the LOT-R natural optimism scale<sup>3</sup>, and demographic questions.



### 3.1 Impression management manipulation

Different impression management techniques were used based on Jones' (2011) framework, such as (i) stress the favorable information (good news) and downplay the unfavorable information (bad news) and (ii) attribute good news to themselves but bad news to the environment. Subjects received information without impression management in the first condition and with impression management in the second condition.

### 3.2 Optimal order manipulation

Six pieces of information about the company were presented to three different groups of subjects. The lists are identical, but the order in which the information was presented was different in each list. Series A opens with favorable information and ends with unfavorable information (Favorable – Unfavorable). This order is reversed in Series B (Unfavorable – Favorable). Additionally, a control group that received information in a neutral order was created, i.e., favorable and unfavorable information interspersed. Thus, to avoid any bias, there were two series for control groups, one starting with favorable information (series C) and another starting with unfavorable information (series D).



## 4. Results

We conducted a web-based questionnaire which was sent by e-mail to Master's Degree students, Ph.D. students, and auditing and accounting professionals. Fifty-two subjects answered our survey. Most participants were men (64%), with the average age of 33, average work experience of 7 years, and when they were asked about their knowledge of financial reports and accounting, the average answer was 8.3 on a scale of 1 to 10. Randomization created homogeneity among all six manipulation groups. There was no reward for answering the survey.

Table 1 presents the mean of each piece of information from the MD&A and the p-value to t-test between mean found and the value considered as neutral



<sup>2</sup> See Appendix. The information used in the survey was written in Portuguese.

<sup>3</sup> We used a natural optimism scale as a proxy to investigate how investors' natural optimism affects investment decisions. We used the Life Orientation Test-Revised (LOT-R) questionnaire (Scheier, Carver, & Bridges, 1994).

information (3). All questions presented expected results in general. Table 1 also presents the mean of each manipulation group.

**Table 1**  
**(Un)favorable information per manipulation groups**

MD&A Information		Mean	Means by Manipulation Groups	Optimal order		
				Unfav. – Fav.	Interspersed	Fav. – Unfav.
Unfavorable	Piece 1	2,64*	Managed	3,22	3	3,42
			Neutral	2,37*	1,75*	1,88*
	Piece 2	2,57*	Managed	3	2,58	3
			Neutral	2,5	2,25*	2,12*
	Piece 3	2,44*	Managed	2,56	2*	2,57
			Neutral	2,63	2,87	2,25
Piece 4	3,92*	Managed	4,11*	3,83*	3,85*	
		Neutral	3,88*	4*	3,75*	
Piece 5	3,81*	Managed	4*	3,75*	3,42	
		Neutral	3,87*	4*	3,75*	
Piece 6	3,65*	Managed	3,55	3,58*	3,57	
		Neutral	3,75*	3,88*	3,62*	
General	3,28*	Managed	3,33	3,58*	3,29	
		Neutral	3	3,5	2,88	

\*  $p < 0,05$

Tables 2 and 3 present descriptive data, and an ANOVA for time used on scrutiny of the Financial Report and propensity to invest, respectively. H1a predicts that participants assigned to the managed information group spend more time scrutinizing financial information than those assigned to the neutral information group. H1b predicts that propensity to invest of participants assigned to the managed information group is higher than from the other group. Although the mean time spent by the neutral information group is higher than the mean time spent by the managed information group (169s. > 143s.), the effect was not significant ( $p = 0.414$ ). As expected, the managed group has higher propensity to invest than neutral group (58.9 > 55.9); however, the effect was not significant ( $p = 0.549$ ).

H2a predicts that the directional halo effect decreases the impact of unfavorable information on scrutinizing and analyzing information. Therefore, we predicted that participants that received information starting with unfavorable information and ending with favorable information spend less time on analysis of financial information (they scrutinize less). Results from our pilot experiment seem to show the opposite of the halo effect prediction, following the prediction of Legg & Sweeny (2014) instead, which affirms that news-recipients prefer to learn bad news first. This group had the lowest mean scrutiny time and the highest mean propensity to invest; however, the effect was not significant for scrutiny time ( $p = 0.358$ ) either for propensity to invest ( $p = 0.346$ ).



**Table 2**  
**Scrutiny time**

**PANEL A: DESCRIPTIVE STATISTICS: MEANS, (STANDARD DEVIATION), NUMBER OF OBSERVATIONS**

Impression Management (IM)	Optimal order			Total
	Unfav. – Fav.	Interspersed direction	Fav. – Unfav.	
Managed information	121 (98) n = 9	167 (109) n = 9	142 (116.82) n = 7	143 (104) n = 25
Neutral information	134 (114) n = 8	202 (84) n = 7	174 (142.18) n = 8	169 (115) n = 23
Total	127 (102) n = 17	182 (97) n = 16	159 (127) n = 15	155 (109) n = 48



**PANEL B: ANOVA**

	Sum of Squares	df	Mean Square	F	p
Model	34657.96	5	6931.59	0,55	0,736
Optimal order	26421.45	2	13210.72	1,05	0,358
Impression management	8542.99	1	8542.99	0,68	0,414
Optimal order x IM	1178.75	2	589.37	0,05	0,954
Residual	503606.56	40	12590.16		
Total	538270.488	45	11961.57		

Panel A shows descriptive statistics, and Panel B provides the results of a standard ANOVA with Scrutiny Time as the dependent variable and Optimal order and Impression Management as independent variables.

We excluded outliers from the sample. For this, we use an upper limit ( $\bar{X} + 2\delta$ ) for the Scrutiny Time variable, thus excluding 4 sample responses (n = 48). Residuals' distribution was normal (Shapiro-Wilk test, p-value = 0.066) and homoscedastic (Breusch Pagan test, p-value = 0.992).

H2b predicts that the interaction between the halo effect and impression management further decreases the impact of unfavorable information on scrutinizing and analyzing processes. Once again, results from our pilot experiment show a non-significant effect (p = 0.463). H2c predicts that frequency of favorable adjectives given to the companies by the subjects is greater when the information is managed or when the information is favorably directed. We used the adjectives collected in a pilot experiment done with undergraduate students and asked participants to select the option that would best qualify the company.



**Table 3**  
**Propensity to invest (%)**

**PANEL A: DESCRIPTIVE STATISTICS: MEANS, (STANDARD DEVIATION),  
NUMBER OF OBSERVATIONS**

Impression Management (IM)	Optimal order			Total
	Unfav. – Fav.	Interspersed direction	Fav. – Unfav.	
Managed information	59.8 (19.3) n = 8	58.2 (20.7) n = 10	58.9 (25.5) n = 7	58.9 (20.8) n = 25
Neutral information	66.1 (15.5) n = 8	49 (16.4) n = 8	51.3 (17) n = 6	55.9 (17.4) n = 22
Total	62.9 (17.2) n = 16	54.1 (18.9) n = 18	55.4 (21.4) n = 13	57.5 (19.1) n = 47

**PANEL B: ANOVA**

	Sum of Squares	df	Mean Square	F	p
Model	1459.54	5	291.91	0.78	0,570
Optimal order	814.34	2	407.17	1.09	0,346
Impression management	136.51	1	136.61	0.36	0,549
Optimal order x IM	586.66	2	293.33	1.78	0,463
Residual	15340.17	41	274.15		
Total	16799.70	46	365.21		

Panel A shows descriptive statistics, and Panel B provides the results of a standard ANOVA with Propensity to Invest as the dependent variable and Optimal order and Impression Management as independent variables. We excluded outliers from the sample. For this, we use an upper limit ( $\bar{X} + 2\delta$ ) for the Scrutiny Time variable, thus excluding 5 sample responses (n = 47). Residuals' distribution was normal (Shapiro-Wilk test, p-value = 0.051) and homoscedastic (Breusch Pagan test, p-value = 0.817).

The participants had to choose one of the two options for ten pairs of adjectives. Each pair of dichotomous adjectives (clear adjectives) was given a score of 0 if the unfavorable word was chosen and 1 if the favorable word was chosen. The ambiguous adjectives were also classified using 0 or 1 scores, but we were not able to classify these terms as favorable or unfavorable. Panel A in Table 4 shows the classification of adjectives by different manipulation of the halo effect and Panel B shows the same thing but by impression management manipulation in different groups.



**Table 4**  
**Adjectives analysis**

<b>PANEL A - ADJECTIVES BY OPTIMAL ORDER</b>			
Dichotomous adjectives	Participants that chose the favorable adjective (%)		
	Unfav. – Fav.	Interspersed direction	Fav. – Unfav.
Insecure – Confident	88	60	60
Disorganized – Organized	100	80	60
Uncommitted – Committed	71	85	86
Uncontrolled – Controlled	82	75	73
Fragile – Solid	71	45	67
Dangerous – Safe	53	40	53
Unclear - Transparent	71	75	53
Volatile - Constant *	35	30	67
Ambiguous adjectives (left adjective = 0 / right adjective = 1)			
Pessimistic - Optimistic	59	75	73
Conservative - Aggressive	35	55	40
<b>PANEL B - ADJECTIVES BY IMPRESSION MANAGEMENT</b>			
Dichotomous adjectives	Neutral	Managed	
Unfavorable – Favorable	67	71	
Insecure - Confident **	67	93	
Disorganized - Organized	75	86	
Uncommitted – Committed	71	82	
Uncontrolled - Controlled	50	68	
Fragile - Solid **	33	61	
Dangerous – Safe	54	79	
Unclear – Transparent	46	39	
Volatile - Constant			
Ambiguous adjectives (left adjective = 0 / right adjective = 1)			
Pessimistic – Optimistic	67	71	
Conservative - Aggressive	37	50	

\*Interspersed direction  $\neq$  Favorable direction ( $p < 0.05$ ). \*\*Neutral  $\neq$  Managed ( $p < 0.05$ )

Only one adjective was significantly different among optimal order groups (Volatile – Constant). The favorable – unfavorable direction group classified the company as Constant while the interspersed group classified the company as Volatile. There is no statistical mean difference between Series A and Series B. This result is partially in line with our expectations about the halo effect. Our explanation is that presenting favorable information initially makes participants perceive the company as more constant than volatile. Our expectations were also confirmed about impression management manipulation once two pairs of adjectives were significant (Insecure – Confident / Fragile – Solid). Managed information improved benefits for the company because the image of the company formed by participants was more confident and solid than the participants who received neutral information.

## 5. Final considerations

Impression management and preferences of the order of given information have been researched in psychology, but there are still few studies involving such variables on financial reports disclosed by companies, mainly studies that use



an experimental design. Then, this research contributes to both accounting and psychology literature with the presentation of financial reporting as well as the influence of investors' biases on information acquisition and evaluation of accounting information. Some implications can be made about our findings.



Although the different groups have shown scrutiny time and propensity to invest values directed to which hypothesis described, there were not statistically significant among the effects investigated. Perhaps the small sample is one of the reasons that. However, optimal order and impression management had some impact on company image when subjects classify different pairs of adjectives. Subjects that have received favorable information first classified the company as more constant than the other group (interspersed direction). At the same time as managed information influenced subjects to consider company confident and solid.

### Critical analysis and suggestions for future researches

We had expected the unfavorable information has had an impact on the scrutinizing time; however, the results were not very clear on scrutinizing time. Again, we reviewed studies that used 'scrutinizing time' as a dependent variable. We realized that by performing the task as potential investors, participants did not assume the pressures and risks of a bad decision and they did not analyze the information as we had expected. Then, we suggest manipulating investment position differently in future researches, so that the participants assume the risk of a long investor. We also suggest implementing a reward for the experiment based on performance, as perhaps participants have not assumed the risk of unfavorable information. Alternatively, earnings forecast could be used as a dependent variable instead of propensity to invest; then, we believe that participants would be more committed to the company's performance.

Finally, the experimental design in this paper considered investors receiving just one block of information once to make decisions. However, investors receive information daily from several different sources. It is a limitation of this paper and, for future researches, we suggest implementing information received at different moments and showing other sources of information as analysts' recommendation.



## Appendix - Pieces of information

### 1) *Unfavorable – Favorable direction and neutral information*

Our results and our gross margin declined 0.4% compared to 2Q16, which was 22.1% in 3Q16. The idleness generated a total negative impact of R\$112 million in the 3Q16 (versus R\$164 million in the 1H16 and versus R\$50 million in the 3Q15).

The result in 3Q16 was affected by the idleness and FIFO effects. Accordingly, consolidated EBIT totaled R\$469 million in 3Q16, and EBIT margin decreased by 0.7 p.p. q/q.

Our average price decreased by 3.4% compared to previous quarter, together with a significant increase in sales at promotional prices due to the shelf life of products in inventory (FIFO effect).

3Q16 also marked the end of the rollout of our new segmentation model and Go-to-Market (GTM) strategy. This new segmentation reduces our cost to serve (decrease of 3.4% y/y in variable expenses/kg).

The generation of operating cash flow totaled R\$1,419 million in 3Q16, driven by a positive EBITDA of R\$886 million and positive variation in working capital and other balance sheet items. This generation of cash met our Capex requirements in the quarter, which totaled R\$641 million

As adjusted for the (pro forma) impacts of companies acquired, we had: (i) a financial cycle of 32.8 days, representing an improvement of 6.0 days vs. 3Q15; (ii) net financial leverage of 2.36x EBITDA; and (iii) ROIC (Return on Invested Capital) of 10.3%.

### 2) *Unfavorable – Favorable direction and Managed information*

Our results and our gross margin declined 0.4% compared to 2Q16, which was 22.1% in 3Q16. The idleness generated a total negative impact of R\$112 million in the 3Q16 (versus R\$164 million in the 1H16 and versus R\$50 million in the 3Q15). Notwithstanding the negative industry impact on our gross margin, we were able to mitigate approximately 40% out of a total potential impact of the cycle. This is the result of higher efficiency in our purchase and hedge strategy for grains and management of the exchange rate variation.

The result in 3Q16 was affected due to the exchange rate appreciation, and the contraction in demand as well as the category down trade in Brazil, together with the idleness and FIFO effects. Accordingly, consolidated EBIT totaled R\$469 million in 3Q16, and EBIT margin decreased by 0.7 p.p. q/q.

Our average price decreased by 3.4% q/q, negatively affected by the exchange rate variation in the international market (7.5% appreciation of the Real against the U.S. dollar) and a deterioration of the mix of products and channels in Brazil, together with a significant increase in sales at promotional prices due to the shelf life of products in inventory (FIFO effect).

3Q16 also marked the end of the rollout of our new segmentation model and Go-to-Market (GTM) strategy. With this new segmentation, we are improving our service level (according to the indicators of our clients) while we reduce our cost to serve (decrease of 3.4% y/y in variable expenses/kg).

The generation of operating cash flow totaled R\$1,419 million in 3Q16, driven by a positive EBITDA of R\$886 million and positive variation in working capital and other balance sheet items. This generation of cash met our Capex requirements in the quarter, which totaled R\$641 million, showing a strong resilience of the Company's cash generation even during the difficult times we are facing.

As adjusted for the (pro forma) impacts of companies acquired, we had: (i) a financial cycle of 32.8 days, representing an improvement of 6.0 days vs. 3Q15, due to the improvements in accounts payable, as a result of the projects implemented by the Company; (ii) net financial leverage of 2.36x EBITDA; and (iii) ROIC (Return on Invested Capital) of 10.3%.



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