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Management controls and behavioral factors as drivers of earnings management

Controles gerenciais e fatores comportamentais como direcionadores do gerenciamento de resultados

Controles de gestión y factores de comportamiento como impulsores de la gestión de ganancias

Ana Julia Batistella*
Mestra em Ciências Contábeis e Administração (UNOCHAPECO)
Professora do Centro de Ensino Superior Riograndense – CESURG, Sarandi/RS - Brasil
Email: anajbatistella@hotmail.com
https://orcid.org/0000-0002-7988-7083

Cristian Baú Dal Magro
Doutor em Ciências Contábeis e Administração (FURB)
Professor da Universidade Comunitária da Região de Chapecó – UNOCHAPECO, Chapecó/SC, Brasil
crisbau@unochapeco.edu.br
https://orcid.org/0000-0002-7609-5806

Silvana Dalmutt Kruger
Doutora em Contabilidade (UFSC)
Professora da Universidade Federal do Mato Grosso do Sul (UFMS/CPNA), Nova Andradina/MS, Brasil
silvanak@unochapeco.edu.br
https://orcid.org/0000-0002-3353-4100

Sady Mazzioni
Doutor em Ciências Contábeis e Administração (FURB)
Professor da Universidade Comunitária da Região de Chapecó – UNOCHAPECO, Chapecó/SC, Brasil
sady@unochapeco.edu.br
https://orcid.org/0000-0002-8976-6699

Address of primary contact for correspondence*
Rod. Leonel de Moura Brizola (BR 386), KM 138, Bairro Beira Campo, CEP: 99.560-000, Sarandi/RS, Brasil

Abstract
The use of management control levers can help organizations to assess results and minimize opportunistic behavior by managers. It can shape behavioral factors by providing a trigger, on occasion, to earnings management practices. The aim of the study is to analyze whether the use of management control levers affects the relationship between the behavioral factors of empowerment and creativity of managers and the propensity for earnings management. The sample is composed of 82 respondents (managers of Brazilian companies), for data processing, the structural equation was used. The results suggest that companies that prioritize the use of management control levers by threshold and diagnostic systems create barriers to earnings management practices. On the other hand, companies with the use of management control levers through belief and interactive systems make room for managers to exercise the opportunistic behavior of earnings management.
Keywords: Levers of control; Earnings management; Creativity; Empowerment

Resumo
O uso das alavancas de controle gerencial pode ajudar as organizações na avaliação dos resultados e minimizar comportamentos oportunistas dos gestores. Pode moldar os fatores comportamentais ao oferecer gatilho, em determinadas ocasiões, às práticas de gerenciamento de resultados. O objetivo do estudo é analisar se o uso das alavancas de controle gerencial afeta a relação entre os fatores comportamentais de empoderamento e criatividade dos gestores e a propensão ao gerenciamento de resultados. A amostra contempla 82 respondentes (gestores de empresas brasileiras), para tratamento dos dados utilizou-se da equação estrutural. Os resultados sugerem que empresas que priorizam o uso das alavancas de controle gerencial pelos sistemas de limites e diagnóstico criam barreiras às práticas de gerenciamento de resultados. Por outro lado, empresas com uso das alavancas pelos sistemas de crenças e interativo abrem espaço para os gestores exercerem o comportamento oportunista de gerenciamento de resultados.
Palavras-chave: Alavancas de controle; Gerenciamento de resultados; Criatividade; Empoderamento

Resumen
El uso de palancas de control de gestión puede ayudar a las organizaciones a evaluar los resultados y minimizar el comportamiento oportunista de los gerentes. Puede moldear factores de comportamiento al

proporcionar un desencadenante, en ocasiones, de las prácticas de administración de ganancias. El objetivo del estudio es analizar si uso de palancas de control de gestión afecta la relación entre los factores conductuales de empoderamiento y creatividad de los gerentes y propensión a la gestión de ganancias. La muestra incluye 82 encuestados (gerentes de empresas brasileñas), para tratamiento de datos usamos ecuación estructural. Los resultados sugieren que las empresas que priorizan el uso de palancas de control de gestión por umbrales y sistemas de diagnóstico crean barreras a las prácticas de gestión de ganancias. Por otro lado, empresas con uso de palancas mediante sistemas de creencias y espacios abiertos interactivos para que gerentes ejerzan el comportamiento oportunista de la gestión de ganancias.
Palabras clave: Palancas de control; Gestión de resultados; Creatividad; Empoderamiento

1 Introduction

Organizations consist of individuals who carry with them a baggage of values, rules and beliefs that are aggregated to their cultural and social realities (Casado, 2002). People, therefore, do their work in different ways, depending on the behavioral aspects and characteristics that differentiate them (Ricco, 2004).

Managers are powerful agents of change in organizations (Bertero, 1996) and their behavioral characteristics consist of key elements to justify certain decisions (Pettigrew, 1996). Behavioral differences take the form of concepts of psychology, personality traits, cognitive styles and so on (Ricco, 2004). Since then, it is possible to understand behavior adopted by managers under pressure for results in organizations with different control styles.

In this regard, psychological empowerment involves a motivational process that stems from individual experiences linked to the sense of ability (Corsun & Enz, 1999). It is summed up in the employee's feeling toward their role of importance in the organization; in other words, a psychological state of feeling in control (Barton & Barton, 2011). The psychological state of empowerment shows how far the managers feel able to control aspects of their work (Speklé, Elten & Widener, 2017). In this context, more empowered managers feel able to act individually in corporate decisions.

Some personalities also influence management-related actions. For example, individuals with thoughts turned to creativity and innovation may make significant changes in decision-making processes (Sarooghi, Libaers & Burkemper, 2015). Amabile, Conti, Coon, Lazenby and Herron (1996) mention that creativity reflects the start of all innovation and that successful creation of new products, services and business practices arises from people with good ideas. Accordingly, it is understandable that creativity allows individuals to have room and autonomy to develop useful ideas and create innovative solutions for the organization (Farmer, Tierney & Kung-McIntyre, 2003).

However, converting creative ideas is complex, uncertain and, in many cases, leads to poor results; after all, those processes interrupt and challenge traditional routines (Sarooghi, et al., 2015). While creative individuals connected to senior management can implement innovations, it is possible for them to create situations of earnings management and manipulation, because creative thinking could arrange alternatives when there is pressure to achieve satisfactory earnings.

In this context, the theory of self-determination explains how people's perception regarding action stimuli and contexts of decision influence intentional behavior and, in particular, intrinsic involvement and commitment that individuals feel toward their actions and efforts. Self-determination represents a set of behaviors and skills that endow someone with the ability to be the *causal agent* in relation to their future. Moreover, the social context conditions facilitate individuals' psychological behavior (Deci & Ryan, 2000).

Decisions do not depend solely on what people think is important. Every organization is monitored and controlled by management control systems that play the vital role in running the business for its objective and in eliminating possible conducts, leading an individual's self-determination.

Management controls generate decision-making information and conduct management. However, they may also provide room for managers to act with centralized power. Speklé et al., (2017) report that if management controls are designed for internalization then they support and increase self-determination, thereby raising the perceptions of empowerment. This requires management control structure to uphold autonomy (Deci & Ryan, 2000) and supply a structure suited to the decisions (Grolnick & Ryan, 1989; Koestner, Ryan, Bernieri & Holt, 1984; Sierens, Vansteenkiste, Goossens, Soenens & Dochy, 2009).

One of the management control systems worth mentioning is that proposed by Simons (1995), comprising four levers of control, namely beliefs, boundary (limit), diagnostic and interactive. Literature also portrays impacts on organizations by means of the levers of management control. For example, Arjaliès and Mundy (2013) mention that the levers of management control impact the actions of corporate social responsibility. Garcia Osma, Gomez-Conde and Lopez-Valeiras (2019) suggest an effect of management control systems on earnings management practices.

Earnings management practices result in the intentional use of operational decisions or accounting choices with the sole idea of reporting improvement in the announced book profits (Schipper, 1989; Healy & Whalen, 1999). Merchant (1989) understands earnings management to be management of gains, or any

action by the management that causes an impact on the stated earnings fails to provide economic advantage but in the long term could be harmful to the organization.

In some cases, it is noticeable that these actions are related to the incentives offered in exchange for achieving targets, for example. Noreen (1988), defending a more comprehensive outlook, suggested that management behavior could be affected by forces focusing on self-interest and not normally considered within the economic structure.

Accordingly, managers could use earnings management opportunistically, to report desired results under stakeholder pressure. The opportunistic behavior may derive from manager empowerment and creativity and be intensified by self-determination driven by the way in which the management control system is internalized.

The study is justified while understanding that managers who make use of opportunistic practices generally start this process in order to achieve good results and to "benefit" the company. Therefore, the aim is to understand whether levers of control have an effect on these facts and if this process influenced cognitive styles (Grolnick & Ryan, 1989; Koestner et al., 1984; Sierens et al., 2009; Tessier & Otley, 2012; Arjaliès & Mundy, 2013; Kruis, Speklé & Widener, 2016).

In light of the above, the research problem is as follows: how does the use of levers of management control affect the relation between the managers' behavioral factors of empowerment and creativity and the propensity for earnings management? The aim of the study is to analyze whether the use of management control levers affects the relationship between the behavioral factors of empowerment and creativity of managers and the propensity for earnings management.

The study's relevance also lies in the emphasis of manager behavioral characteristics on the propensity for practices aimed at changing the organizational earnings based on questionable objectives. It also stresses that stakeholders should pay attention to an association between managers' behavioral aspects and training on how to use the management control systems, in order to observe whether the reported result is reliable enough to represent the organizational reality.

The study differentiates when evidencing contribution from the boundary and beliefs systems, rarely commented in earlier studies that focus on diagnostic and interactive systems, such as, for example, Garcia Osma et al., (2019), Gomez-Conde, Lunkes and Rosa (2019) and Arjaliès and Mundy (2013). As a theoretical contribution, the study suggests that diagnostic and boundary systems are compatible in constraining strategic changes that alter the operational cycle of the business. On the other hand, interactive systems and beliefs, together, make the strategic actions of managers more flexible, allowing greater freedom to cut priority expenses, production volumes and abnormal discounts.

2 Levers of Management Control and Earnings Management

The management control process includes all tools and systems that managers use to ensure that their employees' behaviors and decisions are consistent with the organization's objectives and strategies. Simons (1995) developed a model with four elements of management control, referred to as Levers of Control. It is summed up in the control process of the business strategy, which is achieved by balancing the forces of the four different levers, namely: beliefs control, boundary (limit) control, diagnostic control and interactive control.

The power of the levers of control is based on their balanced use, bearing in mind that they generate forces in opposition to each other (Simons, 1995). Altogether, they result in a dynamics between innovation and strategic renovation. They are somewhat predictable, but should be managed to guarantee long-term success (Raisch & Birkinshaw, 2008). Often, strategic misalignment occurs due to the unbalanced use of control levers, penalizing companies that use an internal control system with exaggerated or extremely restrictive flexibility.

For example, the system of beliefs inspires employees to commit to the organization's central values and mission. It is used to inspire and direct the quest for new opportunities and is, therefore, positive (Tessier & Otley, 2012). The belief system can be channeled as a mission, vision, beliefs and so on (Cintra, 2011). It is expected that managers formally and systematically communicate and reinforce these definitions to their subordinates (Simons, 1995).

The inspiration brought by the belief system can make managers constantly envision strategic alternatives to maintain satisfactory results. Managers, encouraged to seek new opportunities, can find in the management of results through operational decisions, totally valid alternatives for meeting the goals.

Similarly, the interactive system helps to achieve new strategies for the organization, considers opinions and informs concerns, encouraging the vertical sharing of information (Tessier & Otley, 2012). The boundary system sets up barriers against organizational action and should be used to outline an acceptable field of activities, taking into account risks to be avoided while, at the same time, seizing the opportunities (Simons, 1995). They are considered negative, since they restrict the behavior of individuals and set boundaries to prevent employees from developing risk behaviors (Cintra, 2011).

Garcia Osma et al., (2019) analyzed the relationship of management accountability systems with earnings management, finding that managers who use the interactive system to concentrate the whole

organization's attention on the concept and implementation of action plans, look to fill the gap between current earnings and the objectives. These actions derive from putting pressure on profits and, therefore, seek to push profits to already preset values, constituting real actions of earnings management.

So far, it is noticeable that beliefs and interactive systems are "liberators" and allow room for managers to highlight their prospects and share them with other stakeholders. Consequently, it should be evidenced that application of these levers in the organizations may cause inverse effects and alter behavioral measures, bearing in mind that they carry with them freedom-based management proposals.

Arjaliès and Mundy (2013) highlight some impacts from using management systems in Corporate Social Responsibility (CSR): (i) the beliefs system is used not only to motivate and inspire employees to find opportunities, but to also incorporate values, some of which may be conflicting; (ii) the interactive system plays an important role in companies that develop CSR, by combining plans and actions to be created, in addition to permitting exchange of information and ideas between employees from different backgrounds, which enables the identifying of strategies and innovations.

In this context, they may imply the routine actions of the company and managers, leading to the diminishing quality of reported accounting information. The imbalance in the use of control levers and the high concentration on belief and interactive systems make managers' actions more flexible, resulting in the following research hypothesis:

Hypothesis 1: Companies preferring to use levers of control through interactive and beliefs systems positively influence earnings management practices.

On the other hand, the boundary system imposes limits on finding opportunities for the organization; that is, it is related to what to do and what not to do. In this sense, ethical standards are defined and informs which actions everyone should avoid (Tessier & Otley, 2012). The boundary system establishes barriers to organizational action and should be used to delineate an acceptable field of activity, taking into account the risks to be avoided and, at the same time, seizing opportunities (Simons, 1995). They are considered negative, as they restrict the behavior of individuals and set limits to prevent employees from developing risky behaviors (Cintra, 2011). In this format, managers feel less attracted to operational choices that harm long-term results, to the detriment of immediate results.

Arjaliès and Mundy (2013) point out, when assessing the diagnostic system, that this is the type of system that monitors procedural progress, and disseminates information, reports and indicators. This system, for example, helps follow up CSR dissemination. However, some companies publish their reports only to achieve legitimacy and a better reputation, which is not particularly positive. Nevertheless, the system, through its monitoring characteristics, does not leave room and opportunity for the managers, inhibiting opportunistic behavior, as in the example of the earnings management practices.

In a complementary way, the diagnostic system seeks to evaluate the results of the predominant strategies, motivate actions, monitor the result of behaviors and reward the achievement of goals (Tessier & Otley, 2012). The diagnostic system is the most traditional lever of control, designed to ensure the attainment of predetermined objectives. It produces an opposite effect to that of the interactive system, bearing in mind that, while encouraging the search for and rise of new ideas and experiments, the diagnostic system prevents the company from shifting its focus (Simons, 1995). Diagnostic use is designed to monitor results obtained and to correct deviations from expected standards, generally understood to be one of the systems with negative force.

In Simons' approach (1995) the boundary and diagnostic systems are regarded as a negative force, namely they coerce, punish, prescribe and control. Through these systems included in the organizational environment managers are kept active, obeying the rules and with no space to manipulate the results, since they are strictly monitored and checked. Thus, the extensive use of border and diagnostic systems can restrict inappropriate behavior and maintain strategic alignment, emerging the following research hypothesis:

Hypothesis 2: Companies preferring to use the levers of control through the boundary and diagnostic systems negatively influence the earnings management practices.

Simons (1995) points out that the fact that there are negative and positive forces among the control systems does not necessarily mean a bad thing, given that the negative forces are as important as the positive controls, which are used to coerce, punish, prescribe and control necessary situations within the organizations.

This is why interaction between the difference uses of the management control system is more efficient for good management. The levers of control are gaining momentum in the literature, since they are considered an MCS that can adapt to strategic challenges and circumstances encountered by organizations (Kruis et al., 2016).

Organizations need to find the balance between unlimited opportunities and limited management attention, noting the search for self-interest and the desire to contribute between the intended and emerging strategy, and finally, between innovation and achieving predictable targets. Simons (1995) suggests that in

seeking the trade-off, organizations need to balance confidence in the four levers of control, to create enough dynamic tension that would probably stimulate complacent behavior and the forces of creative search, inevitable for the organization's success (Kruis et al., 2016).

However, there is evidence that indicates other important factors acting on MCS. In the study by Gomez-Conde et al., (2019) it was found that the use of the interactive system triggers the implementation of environmental innovation practices, resulting in a better performance. However, the use of the diagnostic system is what improves the effect of environmental innovation practices in organizational performance.

2.1 Behavioral factors and levers of control in earnings management

Creativity and empowerment are personal characteristics perceived in managers, helping them to feel more able to take decisions. Creativity enables the perception of new ideas that can keep an organization in the market competing and adapting to constant change (Anderson, Potočnik & Zhou, 2014; Shalley, Zhou & Oldham, 2004). Organizations that offer space and freedom in the workplace indirectly permit their employees' creativity and innovation in deeds and actions (Gilson, Mathieu, Shalley & Ruddy, 2005).

Creativity means how much autonomy the members of an organization feel they gave to develop new ideas and create solutions for work problems, and how much can be used to overcome barriers or create secondary means to solve management problems (Anderson et al., 2014; Shalley et al., 2004). Moreover, Sarooghi et al. (2015) stress that creativity is somewhat complex and could result in unfavorable situations, and in the end change routines and challenge traditional procedures.

Bharadwaj and Menon (2000) investigated the search for creative people in the organizations, mentioning that very often members with this profile are hired in the belief that they could impact performance and especially innovation processes. Nevertheless, the study suggests that it is not enough for organizations to hire creative people and expect upgrade in the company's performance. Likewise, the study stresses that in order to increase creativity companies eventually emphasize management practices and ignore individual mechanisms, which in fact could harm the organization.

Feelings of ownership and control induce creativity. When employees are motivated somehow to find what is new, creativity emerges more easily (Amabile & Sensabaugh, 1992; Amabile et al., 1996). When individuals believe that they have autonomy and freedom, when they feel confident, they automatically become more creative (Alge, Ballinger, Tangirala & Oakley, 2006).

However, creativity induced by feelings of ownership and control can make managers feel free to make decisions that are abnormal to business strategies. Therefore, companies with management controls that offer freedom to promote creativity need to observe and monitor undesirable attitudes.

In this logic, managers with greater freedom, autonomy and creativity would be more likely to manage results, especially in terms of operational decisions. This makes managers feel more confident about their decisions, emerging the following research hypothesis:

Hypothesis 3: Managers with more creativity positively influence the earnings management practices.

Another important characteristic of managers is empowerment, defined as the perception of individuals' self-determination, that is, to what extent employees believe that they can do their work autonomously and can make choices on how they function. Empowered leaders perform their tasks so that there is a non-controlling solidarity leadership. Thus, empowerment is a form of evaluating the managers' independence and freedom (Speklé et al., 2017).

Empowerment allows emancipation of individuals, developing autonomy and freedom. Empowerment benefits and enables engagement, involving joint responsibility and social participation (Kleba & Wendausen, 2009). Definitions on empowerment generally address the idea of decentralization in authority and responsibility of decision-making of lower-level employees in the hierarchy, allowing them freedom to act on their own account, thinking strategically and being responsible for the quality of their actions to boost the organization's operation (Mills & Ungson, 2003; Pardo Del Val & Lloyd, 2003; Barton & Barton, 2011).

The academic approach addresses empowerment from two approaches: structural and psychological. Structural empowerment refers to management practices that aim at granting power and decision. Both include information availability to employees relating to organizational performance, performance-based rewards, knowledge that helps employees to understand and contribute to the organizational performance and power to take decisions that include the organization as a whole (Gkorezis & Petridou, 2008).

Psychological empowerment is summarized in the employee's experience and, more specifically, in the intrinsic task motivation (Thomas & Velthouse, 1990). This is a socially built-up reality, while the structural approach addresses an objective reality. According to Corsun and Enz (1999), empowerment means giving power and understanding the degree that individuals have personal influence or choice options in relation to their own behavior.

Gonzalez, Jiménezes and Lorente (2013) perceived that employees with empowerment have a reflection on employee and client satisfaction. This finding shows that empowered employees feel that the organization fulfills their needs.

Empowered managers need to be monitored because they have a feeling of freedom and autonomy in the development of tasks and, especially, in strategic decisions. These managers who have a high interest in uncontrolled solidary leadership must be observed and monitored so that decisions are in line with business strategies.

Despite the responsibility imbued to managers with empowerment, in order to achieve the goals, they can use the feeling of freedom and autonomy to make strategic choices that improve the published results, emerging the following research hypothesis.

Hypothesis 4: More empowered managers positively influence earnings management practices.

Since they carry with them proposals based on motivation, freedom and inspiration, the belief and interactive systems can impact the routine of the managers and company overall. Considering that they offer the managers further autonomy and power, when linked with the characteristics of empowerment and creativity, they could increase the process of modifying results.

The joint use of belief and interactive systems offers greater freedom to motivate managers to be more creative and autonomous in decisions. However, companies that already have managers with high creativity and empowerment should moderate the use of management control systems that offer flexibility and autonomy, seeking to monitor and convert the skills of these managers into strategic benefits.

Arjaliès and Mundy (2013) noticed in their studies that the belief and interactive systems allow managers to feel free to interact and thereby begin to pressure the profits in order to achieve results, constituting real management actions. Therefore, based on the studies and concept presented thus far, the study hypothesis is proposed as follows:

Hypothesis 5: Companies preferring to use levers of control through the belief and interactive systems positively mediate the relationship between managers with empowerment and creativity behavioral factors and the earnings management practices.

Otherwise, considering that empowered and creative managers find it easier to use the earnings management practices, when included in a company where the boundary and diagnostic systems are strongly perceived, the management however may diminish.

The joint use of boundary and diagnostic systems offers less freedom, being a more attractive model to monitor managers with creativity and empowerment. It is clear that the exclusive use of boundary and diagnostic systems can bureaucratize and discourage innovation, on the other hand, it is beneficial to monitor those managers who have tendencies towards undesirable strategies and opportunistic behaviors.

In order to minimize those aggravating factors, Arjaliès and Mundy (2013) and Simons (1995) point out that the reinforcement in using the levers of boundary (limits) and diagnostic control may prevent managers from obtaining space for opportunist practices.

In light of the above, the study hypothesis is as follows:

Hypothesis 6: Companies preferring to use the levers of control through the boundary and diagnostic systems mediate negatively the relationship between manager with behavioral factors of empowerment and creativity and the earnings management practices.

3 Methodological Procedures

The study herein is characterized in terms of the objectives as descriptive, in terms of survey procedures and approach to the problem as quantitative. The population of the survey comprises managers from Brazilian companies, found and contacted through *Linkedin*. The questionnaires were applied from May to June 2019. From the 855 managers contacted, 82 responded, who comprised the nonprobability sample of the survey. Individuals who hold the position of financial and executive director, accountant, controller, administrative manager and entrepreneur, with training in administration, economics and accounting, participated in the research.

Hair, Sarstedt, Hopkins and Kuppelwieser (2014) indicate that the research sample, in the structural equation model, should be from 5 to 10 cases per estimated parameter. This study includes five variables (estimated parameters) and when estimating the desired sample of 50 cases, the result of the superior sample is found. Even so, the study indicates that the results have the sample as a limitation, as it does not represent the perception of the entire population.

The instrument aimed to capture the managers' perception about behavioral factors of creativity and empowerment, use of the levers of the management control system and propensity to earnings management. It is worth mentioning that the original questionnaire for measuring earnings management

(Greenfield, Norman & Wier, 2008) did not consider all dimension of the theoretical proposition of the operational decision for profit manipulation. Accordingly, the instrument was adapted with the insertion of abnormal cash flow dimensions, abnormal production and abnormal discretionary expenses.

Table 1 shows the latent variables that were derived from the observable variables listed in Appendix.

Table 1
Survey construction

Latent variables	Metrics	Authors
Earnings management	Three questions that assessed the managers' perceptions on earnings management practices.	(Healy, 1985; Merchant & Rockness, 1994; Beuren & Vaz, 2015; Martinez & Martins, 2016; Hope & Wang, 2018).
Creativity	Five questions that assessed the managers' perceptions on personal creativity behavior.	(Shalley et al., 2004; Anderson et al., 2014; Sarooghi et al., 2015).
Empowerment	Five questions that assessed the managers' perceptions on personal behavior of empowerment.	(Amabile & Sensabaugh, 1992; Bharadwaj & Menon, 2000; Mills & Ungson, 2003; Pardo Del Val & Lloyd, 2003; Kleba & Wendausen, 2009; Barton & Barton, 2011).
Boundary & Diagnostic Control	Eight questions that assessed the managers' perceptions on use of levers of control through the boundary and diagnostic systems.	(Simons, 1995; Merchant & Van Der Stede, 2007; Anthony & Govindarajan, 2008; Raisch & Birkinshaw, 2008; Cintra, 2011; Nisiyama & Oyadomari, 2012).
Belief & Interactive Control	Fifteen questions that assessed the managers' perceptions on using the levers of control through the belief and interactive systems.	(Simons, 1995; Merchant & Van Der Stede, 2007; Anthony & Govindarajan, 2008; Raisch & Birkinshaw, 2008; Cintra, 2011; Nisiyama & Oyadomari, 2012).

Source: Prepared by authors.

Attention should be drawn to the latent variables presented and built from the questions on earnings management measured using a 7-point Likert scale and the behavioral factors of creativity and empowerment and using the levers of the management system control for the questions of a 5-point Likert scale, referred to as observable variables.

The data were analyzed by structural equation modeling with partial square minimums, using SmartPLS3 software. The purpose of structural square modeling is to explain the relations between multiple variables. Such equations describe all relations between the constructs involved in the analysis, particularly non-observable factors or latent factors represented by the multiple variables (Hair et al, 2014; Henseler, Hubona & Ray, 2016). The structural equation can be used conceptually to answer any survey question involving direct or indirect observation of one or more independent variables or one or more dependent variables.

It is the most appropriate technique considering that the objective of the study is to determine and validate a causal process of a proposed theoretical model. Therefore, it is a confirmation technique that determines whether the target model is valid. Consequently, the latent variables used in the structural equation model were validated by the confirmatory factor analysis, based on the observable variables, measured directly in the questions of Appendix.

Independent variables are formed by the latent factors of creativity, empowerment, boundary and diagnostic control, interactive control and beliefs control. The dependent variable is the latent factor of earnings management practices. This helped measure the influence of the use of the levers of management control and behavioral factors of creativity and empowerment in the propensity to earnings management practices.

Two structural equation models were used that complement each other. The first focused on observing the direct influence of the use of the different levers of control of the management systems and behavior factors in the earnings management practices. The second structural equation model estimated the mediating effect of the different levers of the management control systems in the relation between the behavioral factors of creativity and empowerment and the earnings management practices.

4 Data Analysis

Initially, the frequency statistics are presented relating to the characteristics of managers and of the companies in which they work, as shown in Table 2. The data in Table 2 show that most of the managers are over 40 years old, are male and work for more than 10 years in the job. In relation to the branch of activity it was found that the majority of managers work in industry and mainly in providing services. With regard to the size of the companies studied, a very similar distribution is found between small (37.80%), medium (31.70%) and large companies (30.50%).

Table 2
Frequency statistics

Code	Question/Result				
IDA	How old are you?				
	(1) 2.40%	(2) 11.00%	(3) 23.20%	(4) 17.10%	(5) 46.30%
	25 years or less	30 years or less	35 years or less	40 years or less	Over 40 years
	Gender?				
GEN	(1) 81.70%	(2) 18.30%			
	Male	Female			
	How long (years) is your experience in business management?				
EXP	(1) 25.60 %	(2) 29.30%	(3) 20.70%	(4) 12.20%	(5) 12.20%
	5 years or less	10 years or less	15 years or less	20 years or less	Over 20 years
	What branch of activity do you work in the company?				
RAM	(1) 12.20 %	(2) 28.00%	(3) 59.80%		
	Commerce	Industry	Service		
	What is the size of the company you work for?				
TAM	(1) 37.80 %	(2) 31.70 %	(3) 30.50%		
	Small	Medium	Large		

Source: Research data.

Table 3 shows the descriptive statistics of the latent variables based on observable variables.

Table 3
Descriptive statistics referring to grouped variables

Latent variables	N.	Average	Mean	Min	Max	Standard deviation
Practices of Earnings Management	82	4.45	4.67	1.00	7.00	1.65
Creativity	82	4.11	4.20	1.40	5.00	0.62
Empowerment	82	4.08	4.20	1.60	5.00	0.69
Boundary and Diagnostic Control	82	3.92	4.06	1.63	5.00	0.87
Belief and Interactive Control	82	3.90	4.00	1.93	5.00	0.66

Source: Research data.

The results indicate that the managers in question show probability for earnings management practices. However, they also show that there is a certain inconsistency between the respondents on this behavior, proven by the high standard deviation of the sample. The behavioral factors are prevalent in the managers' creativity and empowerment. In this sense, it is found that the managers acknowledge their high creativity and empowerment.

Lastly, the managers prioritize the use of levers of management control without emphasizing a specific style of management system. It is concluded that the boundary and diagnostic systems and belief and interactive systems are present in most of the organizations where the managers work. In some cases, the mission, values and beliefs of the organization are highly valorized. Other companies focus on control, diagnostic of the demonstrations and imposition of boundaries, possibly reducing the manager's space for management accounting. These data highlight the importance of using levers of management system control.

4.1 Data analysis using structural equation

To analyze the data in this study, a structural equation model was adopted, which is a linear model that establishes various relations between latent or observed variables. This model is created in two parts: the measurement model and structural model. The purpose of the measurement model is to check whether the items of each construct accurately measure their concept, while the structural model defines the relations between the variables (Fornell & Larcker, 1981).

To check whether the set of items accurately measures the proposed concept and validates the measurement model, it is necessary to use proper statistical techniques. In this sense, the construct's reliability and validity tests were performed, as shown in Table 4.

Table 4
Construct reliability and validity test

Variables	Cronbach's alpha	rho_A	Composite reliability	Average Variance extracted
Earnings Management Practices	0.863	0.873	0.916	0.784
Empowerment	0.832	0.855	0.869	0.580
Creativity	0.821	0.833	0.874	0.583
Diagnostic and Boundary Control	0.922	0.944	0.935	0.643
Interactive and Beliefs control	0.935	0.967	0.940	0.515

Source: Research data.

The construct dimensions were evaluated by the tests of convergent validity, internal consistency reliability and composite reliability. Convergent validation evaluates the degree in which two measurements of the same concept are correlated. The criterion proposed by Fornell and Larcker (1981) indicate convergent validation when the average variance extracted is greater than 40% (Nunnally & Bernstein, 1994). The results indicate that the latent variables presented an average variance extracted indicator of more than 40%, confirming the construct's convergent validation.

Reliability measures the internal consistency between the measured values of items. Reliability is high if Cronbach's alpha and the composite reliability is greater than 0.70. The results indicate values higher than 0.70 in all latent variables, evidencing conditions to confirm the construct reliability. Complementarily, account is taken of the consistency as a result of the rho. A test having been greater than 0.60. Therefore, all adjustment indices for the measurement model have acceptable levels.

Furthermore, the discriminant validity is upheld due to the good adjustment of the model. This indicates that any crossed load does not impair the model's good adjustment (Hair et al., 2014). Care should be given to discriminant validation that checks the degree to which a latent variable is actually different from the others.

The most recommended criterion for assessing the discriminant validity is the Heterotrait-Monotrait ratio (HTMT) that compares the average of correlations crossed between two different latent variables with the average of internal correlations of the actual observable variables. It is thereby necessary to have an HTMT other than 1 and preferably an HTMT <0.90. Table 5 shows the discriminant validity using the Heterotrait-Monotrait ratio of the construct in the structural equation model.

Table 5
Discriminant Validity using the Heterotrait-Monotrait ratio

Variables	Creativity	Diagnostic and Boundary Control	Earnings Management Practices	Empowerment	Interactive and Beliefs Control
Creativity					
Diagnostic & Boundary Control	0.259				
Earnings Management Practices	0.591	0.334			
Empowerment	0.330	0.211	0.378		
Interactive & Beliefs control	0.355	0.297	0.287	0.424	

Source: Research data.

This test helps find any problems relating to the representativeness of each indicator and the construct to be measured. Therefore, the Heterotrait-Monotrait Ratio (HTMT) evaluates the correlations between indicators of different constructs using the Heterotrait-Heteromethod average. In this investigation, the discriminant validity was analyzed as a criterion, with a cutoff point of 0.85, compared to the heterotrait-monotrait ratios, and as they are lower than the cutoff point, the existence of a discriminant was reiterated (Henseler et al., 2015).

After validating the measurement model, the final stage is concentrated on the structural equation model results. Thus, the structural equation model was based on the influence of the use factors of the management control systems and the managers' behavior in the practices of earnings management (Table 6).

Table 6
First order structural equation model estimates

Structural Relations	Original sample	Sample mean	Standard deviation	T Statistics	P-Value
Empowerment -> Earnings Management Practices	0.200	0.207	0.094	2.142	0.033**
Creativity -> Earnings Management Practices	0.329	0.309	0.087	3.794	0.000*
Diagnostic and Boundary Control -> Earnings Management Practices	-0.274	-0.280	0.066	4.154	0.000*
Interactive and Beliefs Control -> Earnings Management Practices	0.202	0.239	0.095	2.121	0.034**

** 5% significance level; * 1% significance level.
Source: Research data.

The findings suggest that managers with empowerment behavior positively influence earnings management practices, evidenced by the 5% significance level and thereby confirming hypothesis H_4. Managers with creative behavior positively influence the earnings management practices, evidenced by the 1% significance level that confirms hypothesis H_3. Moreover, companies that prioritize the use of levers of control in the boundary and diagnostic system negatively influence the earnings management practices, to

the 1% level, confirming hypothesis H_2. Lastly, companies adopting levers of control for the beliefs and interactive system positively influence earnings management practices to the 5% level, confirming hypothesis H_1.

Figure 1 illustrates the research findings.

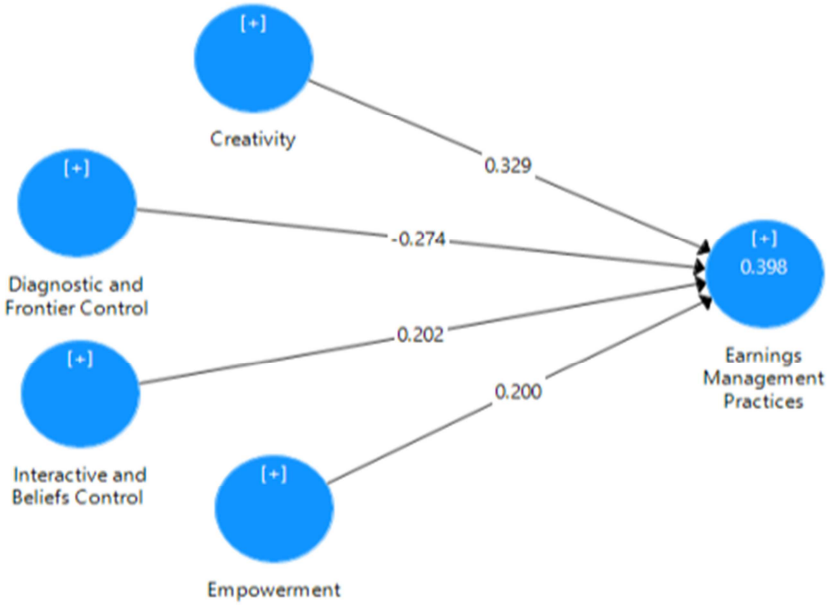

Figure 1 – First order structural equation model
Source: Research data.

It is clear that in the presence of creative and empowered managers earnings management is superior. However, when they are in environments with diagnostic control and boundary control systems the management process tends to diminish.

These findings match the studies by Speklé et al., (2017), Alge et al. (2006), Mundy (2010), Sarooghi et al., (2015), that suggest that creativity allows considerable changes in the organization, shifting innovation processes, autonomy and self-confidence, as well as solving problems such as cash shortage or budget cuts. However, in some cases, it so happens that, due to this, traditional barriers burst in decision-making processes. This factor could impact the quality and security of financial information and the actual organization, since to achieve results, creative managers could eventually decide on conflicting alternatives (Bharadwaj & Menon, 2000).

Findings also are similar to the results of the study by Tuuli and Rowlinson (2009), when indicating that empowered managers encourage improvement in the performance system, since empowerment causes managers to feel more capable of taking decisions for major organizational change. Nevertheless, this process can alter the perception of power that the empowered manager feels and lead to earnings management, since they develop a perception that they have autonomy to do what is required, in order to achieve the desired results. Speklé et al., (2017) stress that these arguments could make sense, after all, the more independent managers may act without content of the other members and thereby impact the organization.

The boundary (limit) system is negative, prohibitive and aims to minimize the risks. It is related to codes of conduct, ethics, rules and sanctions. This system clarifies the behaviors not to be tolerated and aims to protect organizational secrets, reputation and legal complications (Diehl & Souza, 2008). Like the boundary system, diagnostic control looks to prevent deviations, and is of a restrictive nature.

Based on the findings of this research, it is possible to infer that through rigid systems, the managers have fewer opportunities to intervene in the organization's result. It also evidences the negative effect of the levers of control (boundary and diagnostic) in restricting mangers' opportunistic behavior.

On the other hand, levers of control (beliefs and interactive systems) have a positive effect on earnings management. Cruz, Frezatti and Bido (2015) point out that the beliefs system is used to inspire and direct the search for new opportunities, while the interactive system seeks to involve managers to take decisions under activities involving subordinates, factors that can be linked to flexibility in rules and willingness by managers to adopt practices that may be undesirable.

Considering the findings, the mediator model was tested to evidence possible alterations. Table 7 displays the results of the mediating model and complementarily illustrated in Figure 2.

Table 7
Estimates of the first order structural equation model with mediating variables

Structural Relations	Original sample	Sample mean	Standard deviation	T Statistics	P-Value
Diagnostic and Boundary Control -> Creativity -> Earnings Management Practices	-0.132	-0.141	0.054	2.445	0.015**
Diagnostic and Boundary Control -> Empowerment -> Earnings Management Practices	-0.043	-0.055	0.044	0.986	0.325
Interactive and Beliefs Control -> Empowerment -> Earnings Management Practices	0.097	0.103	0.047	2.049	0.041**
Interactive and Beliefs Control -> Creativity -> Earnings Management Practices	0.176	0.181	0.053	3.318	0.001**

** 5% significance level
Source: research data.

In this model, it is noticeable that creativity negatively moderates the relation between a boundary (limit) and diagnostic system with earnings management practices, confirmed by the 5% significance level. This represents that only creative managers, the boundary and diagnostic still continue to reduce the earnings management practices. When the mediating effect of empowerment is analyzed it is found that its negatively affects the relation between the boundary and diagnostic system with earnings management practices and positively affects the relation between the interactive and beliefs system with earnings management practices. However, only the last was significant. Moreover, the effect evidenced by the presence of creative managers positively moderates the relation between the interactive system and beliefs system with earnings management practices at the 5% significance level. These findings fully accept hypothesis H_5 and partly hypothesis H_6.

Accordingly, it is found that creative and empowered managers mediate a positive relation (increasing management practices) when linked to the interactive and beliefs system. Nevertheless, even having creative and empowered managers, the diagnostic and boundary system still reduces the use of management practices.

Figure 2 illustrates the findings of the structural equation model application.

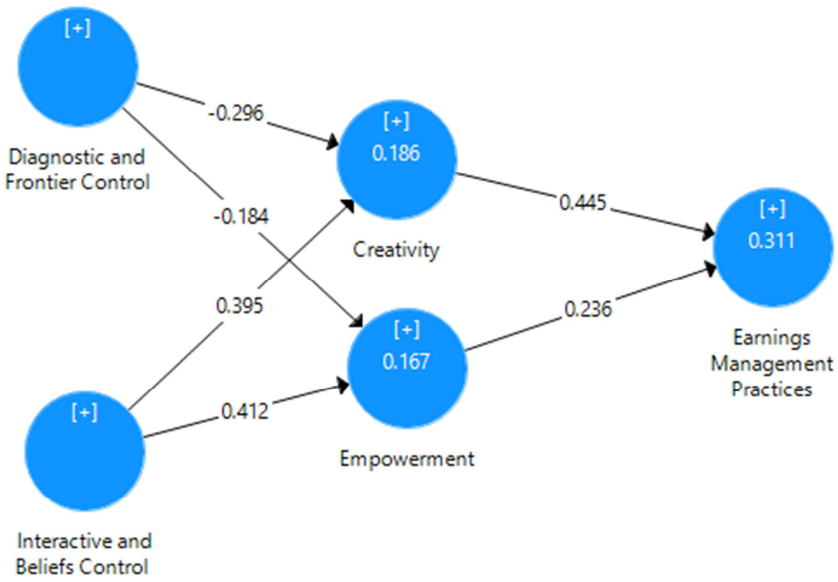

Figure 2 – First order structural equation model with mediating variables
Source: Research data.

The model suggests some possibilities of managers impacting the way in which statements are presented, including (as questioned by the research instrument) meeting targets or cutting costs, alternatively modifying the companies' statements.

It should be mentioned that financial statements and other accounting reports are the main media for publishing financial performance and company control (Palepu, Healy, & Peek, 2010). Martinez and Martins (2016) understands earnings management as the process of decisions imposed by accounting rules in order to submit the desired level of earnings. Thus, it is through this management process that executives of each organization find possibilities.

The consequences of managers' opportunistic practices could lead to financial commitment of companies, yearly earnings and investors' confidence in the company (Hanlon & Shevlin, 2005). These findings are similar to the studies by Healy (1985) and DeFond and Park (1997), which suggest that the personal benefit is one of the main characteristics that explain an individual's willingness to participate in earnings management. Hope and Wang (2018) stress that management more often happens when accounting policies are linked to personal interests.

Studies by Ittner, Larcker and Rajan (1997), Kaplan and Norton (1992), Deloitte and Touche (1994) and Bushman Bushman, Indjejikian and Smith (1996) had similar insights, indicating that the rewards offered to managers are real depending on the earnings obtained in profits and investments. However, they mention that it is not always positive, since the awards based on financial earnings could create emphasis for managers to obtain immediate and short-term results, in detriment to the company's future stability.

The study evidences that the members with most management are also the most empowered and creative. These characteristics are in keeping with the studies by Kleba and Wendausen (2009) and Speklé et al., (2017), when considering empowerment as the process in which leaders have freedom and autonomy to perform tasks and modify results. Likewise, Sarooghi et al. (2015) stress that creativity can become negative, considering the autonomy of the managers in furthering significant changes in the decision-making processes.

Results show that systems take precedence over managers' individual characteristics; that is, those who feel empowered or creative when joining companies that use levers of control (boundary and diagnostic), tend to reduce the use of opportunistic practices.

It is suggested that earnings management through operational decisions occurs with creative and empowered managers who have freedom through the flexibility of management control systems, that is, when there is extensive use of belief and interactive systems. In these companies, the use of border and diagnostic systems can serve as an alternative to monitor the opportunistic attitudes of managers who need to achieve goals linked to profits.

5 Final Considerations

The aim of the study is to analyze whether the use of management control levers affects the relationship between the behavioral factors of empowerment and creativity of managers and the propensity for earnings management. Data were collected using a questionnaire answered by 82 managers from Brazilian organizations. Data were analyzed using structural equation models.

The results suggest that managers with behavioral factors of creativity and empowerment are more likely to adopt earnings management practices, but change their minds in the face of the explicit and widespread use of certain sets of control levers in the management system.

For example, companies that prioritize the use of management control levers through limits and diagnostics systems establish barriers to earnings management practices, even when managers have creativity skills and a feeling of empowerment. On the other hand, companies that use the levers of management control through beliefs and interactive systems pave the way for managers with creativity and empowerment to opportunistically adopt the strategic practices of earnings management.

In this respect, companies that made use of boundary and diagnostic systems continue to mitigate earnings management practices, even when their managers have a feeling of empowerment or are highly creative. While companies within the beliefs and interactive systems turn their gaze toward actions and permit greater freedom for the manager to act.

It is concluded that creativity induced by feelings of ownership and control promotes the adoption of strategies that aim to intentionally modify the profits reported by managers. The same occurs with managers who have empowerment linked to the autonomy offered by belief and interactive systems. It is suggested that the extensive use of belief systems and interactive is inefficient in monitoring undesirable attitudes, especially when managers are highly creative and empowered.

In order to more efficiently monitor the managers' earnings management practices with creativity and empowerment, the joint use of border and diagnostic systems is suggested, as they offer less freedom in decisions. However, it is convenient to be cautious in the exclusive use of a set of management control systems so that there is no giving up on innovation and, on the other hand, a lot of flexibility and autonomy.

These findings contribute to the organizations in order to identify the behaviors that reveal managers' actions of opportunism and the management processes that can reduce them. It also acts as a basis for stakeholders to provide a balance of positive and negative forces through which it is possible to achieve the desired results in the economic sphere.

Despite the different permitted insights, the study has restrictions around the data collection instrument, sent online and without the researchers' clarifications, and may draw an inference in interpreting answers to the questions. Another limitation refers to the number of replies, not allowing generalization of the results.

In future research, the suggestion is to investigate large companies and with public availability of accounting and financial data, so that the published results can be compared with the perceived characteristics relating to the use of Simons' levers.

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Conception and preparation of the manuscript: A. J. Batistella, C. B. Dal Magro, S. Mazzioni, S. D. Kruger
Data collection: A. J. Batistella, C. B. Dal Magro
Data analysis: A. J. Batistella, C. B. Dal Magro, S. Mazzioni, S. D.
Discussion of results: A. J. Batistella, C. B. Dal Magro, S. D. Kruger
Review and approval: A. J. Batistella, C. B. Dal Magro, S. Mazzioni, S. D. Kruger

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