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THEORETICAL ESSAY ON THE COGNITIVE BIASES IN JUDGMENTS OF FINANCIAL STATEMENT PREPARERS

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ABSTRACT

For the development of accounting theory, it is important to identify and discuss behavioral aspects that may influence the judgment and decision making process of financial statement preparers. The study is characterized as a theoretical essay, as it addresses the cognitive effects that can affect this process. The main contribution of this method is to jointly consider separate theoretical pieces and to contemplate an integrative perspective. Several accounting practices can generate cognitive biases, however, in this essay, only the biases arising from practices that allow these judgments will be dealt with, disregarding those not arising from the behavior of these professionals. These are cognitive effects that can affect the behavior of preparers: impulsiveness, lack of skepticism, natural optimism and pessimism, familiarity, adjustment heuristic, overconfidence, loss aversion, change aversion and task complexity. These aspects may lead to a lack of comparability in judgments made by individuals through judgments that differ according to the personality traits of the decision makers. Reflection on the discussion of these behavioral aspects applied to accounting contributes to the development of accounting as a science by integrating psychology with accounting science. For these aspects, questions are elaborated that can be adopted in future studies, by conducting semi-experiments with accounting professionals.

Keywords: Behavioral Accounting. Accounting Theory. IFRS. Cognitive Effects.

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1 INTRODUCTION

Accounting science consists of a systematic process of providing information about the wealth and the effects of economic events on an entity's equity. This process consists of methods, rules and procedures that may differ among participants in certain economic events (Bruns, 1968).

An important job that professionals encounter throughout their performance consists of decision-making, a process characterized by the interaction among: information, which is available to individuals; perceptions, by framing problems; judgment, through analysis of information and problems; and choice of decision, based on the three previous concepts (Ishaque, 2020).

Bruns (1968, p. 469) states that "relatively little is known about how information is used in decision-making and, without this knowledge, it is difficult to predict the different effects that different accounting or information systems will have on decisions". Decision-making comprises difficult and risky work, as bad decisions can damage a business, and sometimes cause irreparable damage (Hammond, Keeney & Raiffa, 1998). Thus, Feldman, Kutscher and Yay (2020) comment that asymmetries, perceptions, emotions, preferences, choices and the individual's own behavior affect judgments and decisions, thus resulting in different assessments of the same event.

It is important to understand the judgment process of financial statement preparers because they establish the initial reliability of the accounting information that will be used later by other internal and external users (Clor-Proell & Maines, 2014). Thus, in addition to establishing initial reliability, it is relevant to understand the judgment process of the preparer of these statements by the novelty of this approach. Normally works that address cognitive biases deal with the decision maker and are based on information from finished statements, so understanding the cognitive biases that influence the preparation of statements contributes to a wide range of users who use statements for their decisions.

For Bonner (1999), the judgments made by the various users of information tend to take the form of predictions about the future or an assessment of a current state of affairs. Thus, in general, future events reported by accounting use expressions of uncertainty, the use of which, however, can influence the behavior of decision makers, with possible impacts on financial reports (Zhang, Zoysa & Cortese, 2019).

Clor-Proell and Nelson (2007, p. 700) comment that the International Accounting Standards Board (IASB) "[…] has defended the change to a more "principles-based" financial reporting system that avoids rules and requires more professional judgment to determine the most suitable accounting". As the International Financial Reporting Standards (IFRS) are based on principles, they contain "expressions of uncertainty" that denote levels of probability when prescribing events (Chand, Cummings & Patel, 2012).

Due to the subjective nature and the increased use of professional judgment, based on principles-based standards, behavioral biases may arise, undermining the ability of accountants to choose a treatment that best reflects the accounting event (Perera, Chand & Mala, 2019). Therefore, analyzing biases in the preparers' decisions has a different approach than other users of information because they are bounded by the use and application of IFRS standards.

The application of accounting standards that include expressions of uncertainty involves a considerable judgment of individuals (Doupnik & Riccio, 2006), which causes different interpretations, undermining the credibility of the convergence process and preventing the comparability of financial reports (Chand *et al.*, 2012). Thus, when preparers make decisions based on expressions of uncertainty, a possible ambiguity in the interpretation of these terms affects the decision-making process (Han, Chand & Mala, 2019).

In recent years a new field of behavioral science has emerged, which focuses on the problems of individuals in the way they research, code, ponder and combine information to form judgments and make decisions (Einhorn, 1976). This field, which is at the intersection of

psychology, economics, statistics and administration, has become relevant to the business area, such as accounting, marketing and finance (Einhorn, 1976).

In 1966, the *American Accounting Association* (AAA) developed a statement entitled "*A Statement of Basic Accounting Theory*" (ASOBAT), which, among several objectives, sought to discuss the possible nature, scope and structure of accounting theory in the future. ASOBAT pointed out that one of the main areas of research in which changes are taking place is knowledge of human behavior and suggested that the study of accounting could include research on behavioral aspects (AAA, 1966). Therefore, an area of research that can contribute to the development of the structure of accounting theory is the impact of accounting information on human actions (AAA, 1966).

Thus, research in behavioral accounting is one of the most discussed topics today. Trotman, Tan and Ang (2011) comment that this field is concerned with the behavior of the organizations' participants, the influence of accounting information on users and the understanding of the judgments of the financial statement preparers themselves.

For Bruns (1968), cognitive relations whose information is relevant to decisions are potentially important for the development of accounting theory and for the design of information decision. Thus, understanding behavior, through the impact of accounting information on users' judgment and decision-making, becomes relevant to the development of accounting theory.

Based on the above, it is important to identify which characteristics of behavior can be influenced by information reported by accounting. Therefore, this article aims to identify and discuss the behavioral aspects that can generate biases in judgments and decisions of statement preparers based on international accounting standards.

It is emphasized that the analysis of cognitive biases fits only in some accounting practices, as there are practices that do not allow professional judgment, that is, that are not discretionary, such as, for example, the payment of a duplicate. This study also disregards accounting practices arising from external pressures that the professional suffers in the preparation of the statements, because, even if they influence their judgments, this work analyzes those arising from behavior, which are related to accounting information. As an example, pressures that the professional suffers from his/her superiors generate biases in the preparation of a statement, however these biases are not due to his/her behavior. The discritionarity in accounting procedures allows for biased judgments, and these biases arise from behavioral aspects. For example, practices related to accruals, which are adjustments arising from the accrual basis, are typical operations that carry a high degree of subjectivity.

The aspects of human behavior most influenced by accounting information must be understood, in order to identify possible biases that distort the judgments of individuals. Thus, the relevance of the study is shown through the disclosure of what has been pointed out as the main "flaws" in the judgments and decisions made by users who generate and use accounting information, due to the idiosyncrasies of these professionals. Therefore, this study aims to contribute to the literature and to users of information by providing a picture of aspects intrinsic to human behavior that can negatively affect the generation of accounting information, affecting their reliability and usefulness for various users.

2 STRUCTURAL ASPECTS OF THE TEST

This research is characterized as a theoretical essay, as it aims to discuss the behavioral characteristics (cognitive effects) that most influence the decision-making process of users of the information provided by accounting, based on studies developed in the behavioral area.

A theoretical essay does not require evidence-based empirical evidence, that is, the use of statistical data or other traditional methods of data collection are not relevant for this type of research (Meneghetti, 2011). Instead, its main contribution is to jointly consider separate theoretical pieces and to contemplate an integrative perspective (Sena, 2009).

Meneghetti (2011, p. 322) comments that the strength of the theoretical essay is not linked to the methodological rigor of the research, but rather "[…] in the reflexive capacity to understand reality". In other words, an essay presents the integration of several different works and in this integration, it aims to present a discussion that helps the individual to understand reality.

Thus, it seeks to contribute by presenting a new conceptual perspective, based on a qualitative-analytical apparatus, that is, it collaborates for scientific studies by using theoretical support to conceive an alternative qualitative perspective for literature (Sena, 2009).

According to Barney (2001), the most difficult part in the preparation of a theoretical essay is perhaps the positioning of an argument related to the literature perceived by the researcher. Therefore, Barney (2001, p. 643) comments that there is no better way to position a theoretical essay, due to the subjectivity of the researcher's selection by the researched object, "[…] and whatever the choice made in relation to positioning involves necessarily emphasize some perceptions at the expense of others".

Finally, in the theoretical essay, research guidance is not necessarily given by the search for answers and true statements, but by outlining questions that guide subjects towards deeper reflections (Meneghetti, 2011). Therefore, in the theoretical essay body, for each concept or theory presented, related questions will be outlined.

3 THEORETICAL ESSAY BODY

3.1 Users of accounting information, judgment and decision-making

Accounting aims to generate information to support the judgment and decision-making process of internal and external users. Thus, as accounting information is determined in part by an accounting system, a classification of decision makers provides insights into the effect that accounting information can have on the set of decisions selected by them (Bruns, 1968).

Judgments and decisions using accounting information are made by four major groups: auditors, as the entire audit process is permeated by professional judgments based on international accounting standards; statements preparers, since they make judgments about what to include in the reports; external users of the statements, who make judgments about future results and future cash flows; and, finally, managers, who use financial reports for planning, evaluation, performance and resource allocation decisions (Trotman *et al.*, 2011).

As CPC 00 (R2) points out, external users, to whom the financial reports are intended, are understood as: "[…] investors, creditors for loans and other creditors, existing and potential […]", who cannot "[…] require reporting entities to provide information directly to them" (CPC, 2019, p. 5). These are considered as the main users of accounting reports, prepared by accounting professionals, considered as internal users.

Therefore, each of these user groups can affect the company and its operations, as the accounting information is used as part of the decision process. However, the objectives of external and internal users may differ, thus making the analysis of the effects of accounting information on the different classes of decision makers a difficult task to understand (Bruns, 1968).

Chand *et al.* (2012) state that it is unlikely that each individual will have the same experiences, which causes judgments and decisions to vary. For this reason, the analysis of the behavioral aspects that influence the decisions of the users of accounting information will be made specifically for financial statement preparers, as these establish the initial reliability of the accounting information that will be used by the other users (Clor-Proell & Maines, 2014).

Bruns (1968, p. 471) comments that decisions affect future events, as future actions are determined from the moment a decision is made. Thus, the interest in understanding the behavior of the individual in his/her decision-making is relevant, since a large part of accounting deals

with the evaluation of information, the formation of judgments and the decision-making based on judgments, which are sometimes related future events (Einhorn, 1976).

It is important to differentiate judgment from decision-making for better understanding. Bonner (1999, p. 385) defines judgment as the "[…] formation of an idea, opinion or estimate about an object, an event, a state or another type of phenomenon", while decision-making "[…] refers to think about the issue and take action ", that is, the judgments reflect the individual's beliefs and the decisions refer to both beliefs and attitudes.

3.2 Judgment of preparers based on international accounting standards

The IASB has defended the change to a more principles-based financial reporting system, minimizing the use of rules and requiring more professional judgment to determine a more appropriate level of recognition and measurement (Clor-Proell & Nelson, 2007). Thus, as IFRS standards are based on principles, "[...] professional judgment is important and the desire for an impartial report is paramount" (Chand, Patel & Patel, 2010, p. 280).

The statement preparers are the main users of the IFRS standards, as they make judgments about what should be included in the financial reports, what accounting treatments to adopt, the estimates used and the probability of future events (Trotman *et al.*, 2011). Thus, the standards issued by the IASB require that those statement preparers properly apply their judgment on what type of information to include in the reports (Chand *et al.*, 2010).

However, Chand *et al.* (2010, p. 281) comment that if "IFRS standards are not applied consistently, then comparable reports are unlikely to be achieved even if countries adopt a single set of globally acceptable financial reporting standards". What can generate inconsistency in the application of the standards is the "[…] lack of agreement as to the numerical meaning of the expressions of uncertainty contained in the IFRS […]", which can result in a lack of comparability of companies (Chand *et al.*, 2012, p. 156).

IFRS has a significant number of expressions of uncertainty related to the recognition and disclosure of accounting items (Zhang *et al.*, 2019). These expressions of uncertainty, which constitute thresholds for recognition, measurement or disclosure, involve considerable judgment on the part of individuals, especially the statement preparers (Doupnik & Riccio, 2006).

The expressions contained in accounting standards serve to guide judgments and are often used to denote levels of probability when prescribing the recognition, measurement and disclosure of events (Chand *et al.*, 2012). However, the use of these expressions can have unintended consequences for the manipulation of information, as people interpret expressions of uncertainty in different ways and preparers can take advantage of the ambiguity to disguise risks and adverse results (Zhang *et al.*, 2019).

Almeida, Lemes, Weffort and Malaquias (2008), when investigating whether different users have different perceptions in relation to expressions of uncertainty listed in accounting standards applied in Brazil, conclude that the perceptions are different for the different types of information users and these expressions have the potential for varied interpretations, which consequently can distort the preparation and interpretation of financial statements and reports, thus interfering in the decision-making of other users. Therefore, this divergence of interpretations of the same term can have negative consequences due to different judgments from users (Almeida *et al.*, 2008).

Furthermore, since individuals have different objectives, their judgments can differ substantially. This divergence of interests makes the analysis of the effects of accounting information on users' judgments and decisions a difficult task (Bruns, 1968). Therefore, as individuals do not have the same experiences, there is variation in their judgments (Chand *et al.*, 2012), which can undermine the comparability process in financial reports, precisely because they are based on IFRS standards, which have these expressions of uncertainty that can be highly influenced by the characteristics of each individual responsible for producing the information.

Therefore, based on the above, standards based on expressions of uncertainty aim to increase the power of judgment of the financial statement preparer. However, when dealing with judgments based on uncertainty, this professional may present several different interpretations that, in addition to generating a lack of comparability in their judgments, may cause cognitive biases in the procedures adopted, distorting the information reported in the financial statements prepared by the accounting professional.

3.3 Behavioral aspects in accounting judgments and decisions

It is relevant to understand the behavioral aspects of the individual who uses accounting information, since he is influenced by the type of information he receives. The document developed by AAA in 1966, entitled ASOBAT, points out that the research area that studies the impact of accounting measures on human actions can contribute to the development of accounting theory, since different accounting measures have the power to influence the reasoning of these individuals (AAA, 1966).

Bruns (1968, p. 469) comments that the understanding of "[…] behavioral relationships about which information is relevant, are potentially important for the development of accounting theory and for the design of decision systems based on accounting information". Thus, a new field of behavioral science has emerged since these years. This field, called "behavioral accounting", is concerned with understanding the influence of accounting information in the judgments and decisions of internal and external users (Trotman *et al.*, 2011).

An examination of the literature on behavioral accounting suggests that accounting professionals have avoided the development of their own behavioral model, borrowing a set of assumptions from other areas, such as economics (Caplan, 1966). Thus, it has been suggested that any behavioral theory of rational choice should consider certain cognitive limits of the decision maker, such as: limited knowledge with respect to possible alternatives and consequences; limited cognitive ability; constantly changing value structure; and a tendency to "satisfy" the agents' own desires instead of maximizing the interests of the main ones (Caplan, 1966).

Since the judgment and decision of individuals are based on a rational choice, they can be mistaken in their decision-making. Caplan (1966, p. 502) comments that rational behavior "[...] consists of looking for limited alternatives for a reasonable solution under conditions in which the consequences of the action are uncertain". Hammond *et al.* (1998) point out that these mistakes represent a series of flaws in the way individuals think about their judgments and decisions, which can be represented by means of heuristics, which correspond to sensorial mistakes; and biases, which portray irrational anomalies in our thinking.

Tversky and Kahneman (1973) comment that when individuals need to judge probability, usually based on expressions of uncertainty, they use heuristics in their judgments, aiming to make them simpler. These heuristics, used under conditions of uncertainty, sometimes produce reasonable judgments, but they also lead to errors (Kahneman & Tversky, 1973). Thus, as pointed out by Perera *et al.* (2019), even the most conscientious statement preparers need to be prepared for the hidden biases to which everyone is susceptible.

The hidden biases of behavior are related to thought by analogy that human beings present, being related to previous "doubtful" experiences, which can undermine their reflections (Reva, 2019). In order to process information efficiently, individuals tend to use shortcuts, but nowadays the use of these shortcuts is susceptible to hidden biases (for example, ethnicity or gender), which are due to human evolution and can result in bad decisions (Bang & Frith, 2017).

Since the bias arising from irrational thinking represents mistakes in the way an individual thinks, as Hammond *et al.* (1998), this study aims to identify and discuss some cognitive effects that can generate biases in the judgment of statement preparers, about what to include in the financial reports of the entities, that is, about the recognition, measurement and disclosure based on IFRS standards.

3.3.1 Impulsiveness

The decision-making process is composed of two cognitive systems, called system 1 and system 2. In system 1, the decision-making process occurs spontaneously and does not require or consume much attention from the decision maker, so this process is executed quickly; in system 2, mental processes require effort, motivation, concentration and learning rules in execution, so the decision process is slower and more reflective (Frederick, 2005).

Thus, Frederick (2005) developed the Cognitive Reflection Test (CRT), which aims to assess whether an individual is more impulsive or reflective in his judgment and decision-making. CRT consists of a simple task to measure the cognitive capacity of the decision maker, that is, whether he is impulsive or reflective in his judgments (Jelihovschi, Cardoso & Linhares, 2016). Thus, more reflective people are expected to present "better" choices in relation to a task, while more impulsive people present not so good choices (Frederick, 2005).

Based on the above, the questions related to reflexivity and impulsiveness proposed in this article can be presented as follows:

Q_{1a}: Do the most reflective financial statement preparers tend to be less biased in their judgments in relation to accounting events?

Q_{1b}: Do the most impulsive financial statement preparers tend to be more biased in their judgments in relation to accounting events?

3.3.2 Absence of Skepticism

Professional skepticism can be defined in several ways, due to the lack of common understanding among regulators, professionals and researchers. According to Nolder and Kadous (2015), for regulators, professional skepticism is defined as an attitude that includes a questioning mind and a critical assessment of the evidence; for professionals, skepticism can be defined as an attitude that represents a good mentality; and, finally, for researchers, skepticism consists of postponing judgment until sufficient evidence is accumulated to reduce risk in judgment and decision-making.

According to Brewster, Peecher and Solomon (2015) professional skepticism can be exercised as a means of improving the quality of professional judgment, as the professional has more critical thinking in relation to his decision-making, which reduces the risk and consequently can reduce bias in judgments made. For Rasso (2015), high-level interpretations are related to greater professional skepticism, which can improve the quality of the judgment made.

In a task, professional skepticism can be measured by asking the professional for more evidence to make his judgment and later make a decision. Thus, according to Nolder and Kadous (2015), professional skepticism represents an attitude, which can have positive consequences for reducing bias in the judgment and decision-making of several accounting users, including the preparers who make judgments based on information. Thus, the question related to professional skepticism applied to the preparers is presented as follows:

Q_2: Do financial statement preparers who are more professionally skeptical tend to be less biased in their judgments in relation to accounting events?

3.3.3 Natural Optimism and Pessimism

Individuals' perceptions can be distorted through optimism and pessimism. Optimistic people expect things to go their way, assuming that good instead of bad things will happen to them, while pessimistic people believe that things will not happen their way and tend to always

anticipate bad results (Scheier & Carver, 1985).

Optimism and pessimism consist of an individual's inclination to expect the best or worst possible outcome, which can distort reality about an event. For Scheier, Carver and Bridges (1994), optimists tend to maintain positive expectations for future events, while pessimists are inclined to maintain more negative expectations for the future.

Thus, in order to investigate the effects of optimism on behavior, Scheier and Carver (1985, p. 232) created a scale to measure the individual's dispositional optimism/pessimism. The test, called Life Orientation Test (LOT), assesses the favorability of a person's generalized expectation of results and appears "[…] to have an adequate level of internal consistency, test and retest reliability, convergent and discriminant validity to make it suitable for use in research, when this measure is desired".

Therefore, as optimistic people tend to attribute positive expectations and pessimistic people negative expectations, the research questions related to the third aspect addressed in this essay are outlined as follows:

Q_{3a}: Do optimistic financial statement preparers tend to be biased in their judgments, anticipating recognition and overestimating events with a positive impact on the result?

Q_{3b}: Do pessimistic financial statement preparers tend to be biased in their judgments, postponing recognition and underestimating events with a positive impact on results?

3.3.4 Familiarity

The familiarity aspect is considered an important factor that allows the financial statement preparers to consistently interpret and apply their judgments, reducing the uncertainty inherent in the work through the introduction of new accounting standards (Chand *et al.*, 2010).

Chand *et al.* (2010, p. 282) comment that "the better professional accountants are trained and the more they are exposed to a new standard, the greater their level of familiarity with the standard". The interpretation and application of accounting standards known as "old" may be more coherent than "new" standards, since the procedures adopted in the old standards are more familiar than the procedures of the new standards (Chand et al., 2010). Also, professionals who are not familiar with the accounting standard may be reluctant to exercise their judgment.

On the other hand, individuals less familiar or less experienced with a certain judgment task behave more cautiously or risk-averse, compared to those who are more familiar with the task (Chand *et al.*, 2010).

The predictions about future events made by individuals tend to be based on their memories of past (family) events that may have left a strong impression, distorting the predictions about future events (Hammond *et al.*, 1998).

Based on the above, the effect of familiarity in the judgments of financial statement preparers is inconclusive, since the authors positively or negatively defend the effect of familiarity in the professional judgment. Therefore, two questions regarding this behavioral aspect are presented:

Q_{4a}: Do financial statement preparers who are more familiar with the accounting standard tend to be less biased in their judgments in relation to accounting events?

Q_{4b}: Do financial statement preparers who are more familiar with the accounting standard tend to be more biased in their judgments in relation to accounting events?

3.3.5 Anchoring Heuristics

Judgments and decisions are often influenced by some previous value. Individuals make estimates, starting with an initial value, which is adjusted to produce a final answer (Tversky & Kahneman, 1974). The initial value (considered as the anchor) "[...] can be suggested by the formulation of the problem or it can be the result of a partial calculation", and the values estimated later are inclined to the initial ones, that is, the judgments are anchored by the initial values (Trotman *et al.*, 2011, p. 287).

In business, the most common types of anchoring are past events or trends. For example, a merchant tries to project sales of a given product for the next year, but in his judgments, he ends up being based on the sales volume of previous years, that is, the old numbers become anchors for future estimates (Hammond *et al.*, 1998, p. 3). In short, anchoring suggests that in the decision-making process judgments are biased by reference factors, so that past values influence future decisions.

Thus, as the financial statement preparers make judgments about future events based on expressions of uncertainty, the fifth research question is presented as follows:
Q_5: Do financial statement preparers using anchors tend to be more biased in their judgments in relation to accounting events?

3.3.6 Overconfidence

A finding specifically relevant to finance is that the degree of overconfidence varies among individuals (De Bondt & Thaler, 1995). A considerable amount of research in finance suggests that there are individuals overconfident about their ability to make judgments about the future (Scott, Stumpp & Xu, 2003).

Even though most people are good at making estimates and predictions about future events, overconfidence affects the accuracy of the predictions made, leading to errors of judgment and, in turn, to bad decisions (Hammond *et al.*, 1998), that is, overconfidence is considered a bias in the judgments made.

Scott *et al.* (2003) define an overconfident person as someone who strongly believes in their own evaluations of future events. De Bondt and Thaler (1995) comment that the most robust finding in the psychology of judgment is that overconfident people overestimate the reliability of their knowledge, which negatively influences their judgments and decisions.

If individuals overestimate or underestimate their judgments based on overconfidence, they can lose attractive opportunities and expose the business to a greater risk than they realize (Hammond *et al.*, 1998). Thus, overconfident individuals have a disparity between reality and beliefs in their judgments (Scott *et al.*, 2003). Thus, the sixth research question related to overconfidence bias can be presented as follows:
Q_6: Do financial statement preparers who are overconfident tend to be more biased in their judgments in relation to accounting events?

3.3.7 Loss Aversion

Loss aversion has been used to explain a wide range of economic behavior by decision makers (Tom, Fox, Trepel & Poldrack, 2007). This factor implies that "[…] the impact of a difference in one dimension is generally greater when that difference is assessed as a loss than when the same difference is assessed as a gain (Tversky & Kahneman, 1991, p. 1040).

Kahneman, Knetsch and Thaler (1991) comment that a certain difference between two options will have a greater impact if it is seen as a difference between options that have disadvantages than between advantageous options. Therefore, individuals may be averse to loss because they are more "[…] sensitive to the possibility of losing objects or money than the possibility of winning the same objects or money" (Tom *et al.*, 2007, p. 515).

The basic intuition about loss aversion is that losses (results below expectations) are greater than gains (results above expectations) (Tversky & Kahneman, 1991), causing individuals to present different judgments for the two operations, this characteristic being considered a bias in the judgments and decisions of individuals.

Thus, the loss aversion bias may reflect an asymmetric response to the opposition losses versus gains within a single information system (Tom *et al.*, 2007), and this asymmetry can distort the judgment of users of accounting information, if they present this bias. Therefore, a general conclusion about loss aversion is that such choices are best explained because the changes that make things worse have more effect than those that make things better (Kahneman *et al.*, 1991).

Based on the above, it is understood that the loss aversion bias can significantly influence the judgments of financial statement preparers. Thus, the seventh research question is presented as follows:

Q_7: Do financial statements preparers who are averse to loss tend to be more biased in their judgments in relation to accounting events?

3.3.8 Change aversion (Status Quo)

One implication of loss aversion is that individuals have a strong tendency to remain as they are, because the disadvantages of changing are greater than the advantages. Thus, since the *status quo* is a natural consequence of the asymmetry of loss aversion, the disadvantages of a change are greater than its advantages (Kahneman *et al.*, 1991).

The *status quo* represents the change aversion, that is, doing nothing, maintaining the current or previous decision, is almost always a possibility (Samuelson & Zeckhauser, 1988). The *status quo* is considered a bias that influences the choices made and represents the desire of individuals to protect the ego against possible damage caused by changes (Hammond *et al.*, 1998).

Faced with new options, decision makers sometimes follow the *status quo*. For example, they tend to follow routine company policies, buy products from the same brands, remain in the same job, among others, and changing means taking risks (Samuelson & Zeckhauser, 1988).

For Hammond *et al.* (1998), breaking with the *status quo* means acting and, when the individual acts, he takes responsibility for the risk. So, naturally, people look for reasons not to change, maintaining the *status quo*, which represents the safest course, avoiding risk and, consequently, losses due to fear of change.

Therefore, based on the above, individuals naturally exhibit this bias of change aversion, which represents a trap within our psyche, influencing our judgments (Hammond *et al.*, 1998). Thus, the eighth question proposed by the research is presented as follows:

Q_8: Do financial statement preparers who are averse to change tend to be more biased in their judgments in relation to accounting events?

3.3.9 Task Complexity

Task complexity can be defined as the amount of attention or processing that a task requires, as well as the structure and clarity it provides (Choi, Newman & Tafkov, 2015). For Chand *et al.* (2010), the complexity of an accounting task increases the time spent on the cognitive effort applied in the interpretation of a standard.

As exposed in the study by Libby and Tan (1994), the level of complexity can be defined in two ways: structured tasks, which represent the least complex; and unstructured tasks, which represent the most complex. Performing routine or family tasks means performing "structured" tasks, as the procedure is well established and can be followed by an objective response (Chand *et al.*, 2010).

Libby e Tan (1994) comment that in a well-structured task the problem to be solved is well defined and the alternative solutions and relevant information well specified, not requiring many calculations and application of reasoning. Unstructured tasks, on the other hand, may not have objectively correct answers, provide less guidance and are generally more complex (Chand *et al.*, 2010). In highly complex tasks, it is necessary to put together a set of strategies to make a decision.

Specifically, when an accounting standard is based on principles, it is more complex. Therefore, the financial statement preparer will need to interpret expressions of uncertainty and assess several general principles in determining financial disclosure (Chand *et al.*, 2010). Thus, considering that the accounting standards issued by the IASB are more "complex", the amount of information that professionals must assess is greater (Chand *et al.*, 2010).

Ishaque (2020) comments that the greater the difficulty perceived by professionals when performing a task, the less likely they are to perform it correctly, however, in the study developed by Rasso (2015), it was identified that the more complex tasks can induce greater skeptical action of the professional, because a greater focus is required by the degree of difficulty of the task, demanding a greater cognitive effort from the professional. Thus, with greater cognitive effort, the individual uses system 2 to make his judgments, being more reflective and reducing the bias in decision-making (Rasso, 2015).

Thus, based on the above, as the international accounting standards issued by the IASB are based on principles, they contain expressions of uncertainty that make the task of judgment and decision-making more complex. Because of this, the questions related to the ninth aspect discussed in this research are presented as follows:

Q_{9a}: Do financial statement preparers who receive a more complex task tend to be less biased in their judgments in relation to accounting events?

Q_{9b}: Do financial statement preparers who are given a less complex task tend to be more biased in their judgments in relation to accounting events?

4 DISCUSSION OF COGNITIVE EFFECTS IN JUDGMENTS BASED ON UNCERTAINTY

The cognitive effects presented in this essay can distort judgments. Each behavioral aspect presented can cause different judgments for different users, because they carry intrinsic aspects or because the accounting information is presented in a different way.

Impulsiveness and reflexivity are natural characteristics of the individual and the way he processes the information received can distort his judgments, generating a bias that can cause poor decision-making. As discussed in previous studies, it is expected that impulsive professionals are more biased, as they tend to analyze less the available information, while more reflective professionals may be less biased, since their power of analysis is more critical, causing greater approximation of the desired result for the event.

Professional skepticism is also understood as a characteristic. As presented, it is expected that a more skeptical professional will generate a more reliable judgment, as skepticism is understood as the power of critical evaluation he has, showing greater caution in the analysis of information for the formulation of the judgment. It is understood that there is a relationship

between professional skepticism and the individual's reflexivity, as both behavioral aspects are related to the power of critical analysis for the formulation of better judgments.

Optimism or pessimism is a natural aspect of human behavior and the ideal judgment is one considered neutral, that is, without selection bias. Thus, individuals who present themselves as optimists or pessimists are considered as those who present biased judgments, thus distorting the results presented and the consequent decision-making. As the judgments in accounting are related to events that influence the results, optimistic individuals are expected to make choices that overestimate the results, while pessimistic individuals make choices that underestimate these results, both presenting judgments that do not represent the reality of the event.

The individual's familiarity with the judgment process is considered a natural aspect. Therefore, as presented, it can have a positive or negative effect on professional judgment, requiring further investigation. It is expected that the professional's familiarity with an event can have a positive effect on the judgment, as he has more knowledge of the correct procedure to perform the best estimate, but this aspect can also have a negative effect, since, if the individual considers this family event, can be impulsive when making the judgment, thus reducing the quality of the information. Therefore, familiarity is related to impulsiveness and reflexivity.

Another aspect that can influence the judgments of these users is the type of information they have, and whether that past information influences their judgments or not. It is expected that users 'past practices may distort their judgments and that impulsiveness and reflexivity can mitigate the effect of this past information (anchors) on the preparers' judgments. Professional skepticism can also mitigate the effect, that is, the more skeptical the professional, the less anchors he can use.

Overconfidence is another natural effect of the individual in making his judgment of events. Highly confident individuals tend to rely heavily on their judgments and additional information about these events may not have an effect on their decision. Thus, it is expected that someone with overconfidence will have biased judgments. It is understood that this aspect is related to impulsiveness and that these individuals are not skeptical in their decisions.

The loss and change aversion are two characteristics related to each other and considered natural aspects of people. Individuals who are averse to losses are expected to distort their judgments, always choosing not to take risks in operations, even if attractive, and because of this, they are averse to change, always choosing to keep with the same option, for fear to take chances. Thus, when dealing with future events, based on expressions of uncertainty, individuals averse to loss and change, when estimating future events that can decrease results, can make unreliable judgments. Users who have these characteristics can be considered pessimistic, as discussed previously.

The last aspect discussed refers to the complexity of the accounting task, that is, the way in which information is provided to the preparer. It is expected that it, whether structured or not, can influence users' judgments. When the information is complex, the individual may have to reflect more on the issue, losing his impulsiveness (if he presents it naturally). However, in less complex tasks, the individual makes his judgments more impulsively, even due to his familiarity with the task, which can distort his judgments.

It is understood, therefore, that the aspects presented can influence judgments that the statement preparers make. Also, it is noticed that at various times the cognitive effects presented are related, being able to moderate the effect of some on others and helping to improve

(or not) the judgments made based on expressions of uncertainty on the part of the accounting preparers.

5 FINAL CONSIDERATIONS

Judgments and decisions made by individuals at the corporate level require accounting information and these professionals are called users of that information. The most diverse users of the statements make judgments about future results, that is, the judgments made by them tend to take the form of predictions about an uncertain future event.

Thus, given the importance of accounting information for its various users, there was an effort on the part of regulatory institutions to adopt a system of financial reporting based on principles, giving greater power of judgment to accounting professionals. The IASB is responsible for issuing principles-based IFRS standards. However, these standards denote expressions of uncertainty, usually based on future company events.

These expressions of uncertainty are used to express levels of probability of the occurrence of several transactions portrayed by accounting and the application of these standards requires considerable judgment from the financial statement preparers, who are responsible for the recognition, measurement and disclosure of the events portrayed by accounting, that is, by attributing the initial reliability of the accounting information that will be used by auditors, managers, investors and other internal and external users *a posteriori* (Clor-Proell & Maines, 2014).

However, these expressions of uncertainty in the body of the rules, as they involve considerable judgment by the preparers, may differ, depending on the behavioral characteristics involved in the process. These judgments sometimes cause different interpretations of the same expressions by the different users, which comes to undermine the credibility of the accounting convergence process, preventing the comparability of the reports (Chand *et al.*, 2012).

Therefore, as pointed out by ASOBAT (AAA, 1966), for the development of accounting theory, it is necessary to study the impact of accounting measures on human actions, since these different measures have the power to influence the reasoning of decision makers (AAA, 1966). In this case, this study aimed to identify and discuss the behavioral aspects that can influence the judgment and decision-making process of the financial statement preparers.

Behavioral aspects that can influence the process of judgment and decision-making of the preparers were identified, more specifically, judgments based on expressions of uncertainty, about uncertain future events. Expressions of uncertainty are constant in the accounting standards issued by the IASB, so it is important to understand what effects this information can have on users' behavior.

The behavioral aspects discussed in this theoretical essay were: impulsiveness, lack of skepticism, natural optimism and pessimism, familiarity, anchoring, overconfidence, loss aversion, change aversion and task complexity. For all these cognitive effects, one or two research questions related to the aspect were elaborated. It is hoped that each aspect discussed can be tested in future studies.

It is perceived, through the proposals presented, that the users' judgments can be influenced in several ways and several aspects related to the individual's natural behavior or the way the information is evidenced can cause the judgments to be improved or not. Thus, this study aims to contribute to studies that aim to understand the process that permeates decision-making in accounting, contributing to the development of accounting theory and integrating behavioral psychology for a better understanding of decisions.

Nine aspects of human behavior were identified, even though there are other factors that may influence the financial statement preparer in his judgments. Thus, choosing to discuss the cognitive effects listed in this study becomes a limitation. It is suggested for future studies that other behavioral aspects be discussed as influencing the accountants' judgments. It is also suggested that these aspects listed in the body of this theoretical essay be tested empirically.

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