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To cite this article: Victoria Bogdan, Ioana Teodora Meșter & Diana Matica (2018) Insights into some psychological triggers that affect judgements, decision-making and accounting choices, Economic Research-Ekonomika Istraživanja, 31:1, 1289-1306, DOI: [10.1080/1331677X.2018.1476169](https://doi.org/10.1080/1331677X.2018.1476169)

To link to this article: <https://doi.org/10.1080/1331677X.2018.1476169>



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Published online: 24 Jun 2018.



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Insights into some psychological triggers that affect judgements, decision-making and accounting choices

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ABSTRACT

The main objective of the study is to identify and qualitatively investigate the links between the universe of accounting options, managerial decisions, creative accounting and irrational behaviour. We have recognised five different aspects affecting human decisions and which are likely to influence the behaviour of a future professional accountant or a manager. Masters students in accounting from three significant Romanian universities were questioned about their perception regarding creative accounting and were investigated about their personality traits. The results of our experimental study have shown that, according to the M.A. students in accounting, the risk aversion of individuals influences the expressions of the creative accounting phenomenon, but it is not correlated with the interest pursued by the managers in choosing accounting policies. Also, in their perception, the act of managerial decision-making in accounting is not influenced by the individual capacities of the decision-maker to take decisions. Respondents believe that the disposition effect is correlated with the choice of accounting policy to maximise or minimise the company's income and that there is a link between the financial incentives granted by the managers to the accounting professionals in order to beautify the financial statements and the creative accounting practices.

ARTICLE HISTORY

Received 18 February 2016
Accepted 2 October 2017

KEYWORDS

Judgements; decision-making; accounting choices; M.A. students; psychological factors; performance

JEL CLASSIFICATIONS

A12; A13; C12; D03; M41

1. Introduction

Choices and decisions. Every day of our lives runs between the options that we have and the decisions we make following a process more or less rationally based on emotions, previous experiences, beliefs and other factors. Human beings are attracted to and react to a basic, elementary level to what is exposed to the view and generally takes a material form or are impressed by a particular presentation of data, ideas, shapes. We are in general visual beings. On the other hand, yet, we react to patterns, we are comfortable due to our habit to react

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in a certain way to certain events and we are also attracted to stories, adventure, breaking a cycle and we often reject the common place.

The human mind is extremely complex. It responds differently depending on stimuli, the moment when an event or phenomenon occurs, the influences of external factors and not least the individual's experience, level of education, prejudice and other factors related to individual personal development. We are different and react differently to the same stimuli and the same events, even if it is assumed that our responses should be similar. We have started our study from the paradoxical universe of Schwartz's (2004) choices and his writings, Kahneman's (2011) unmatched work and Ariely's (2009, 2010) very interesting elements of irrationality, and we wanted to investigate the perception of masters students in Accounting on creative accounting, considering that they have reached the point when they become familiar with the world of options and strategies and sometimes making decisions under risk and uncertainty.

The experimental investigation of M.A. students was based on a survey and most of the questions followed their perception of accounting options and the accounting manipulation through creative accounting techniques, but there were also inserted questions that followed their reaction to risk and loss, to factors that influence decisions or positive creativity solutions to a current problem. Our work was developed using a theoretical framework that defines the main categories or psychological structures that will be pursued in the study, then the research objectives, methodology and research instruments were drafted, the research hypotheses were designed and tested, the results discussed and in the last section of our work we draw up the conclusions and research limitations. This article is only one possible approach to the study.

2. Theoretical framework

Inspired by the authors, Akerlof and Schiller (2010), who entered the psychological backstage of the way the economy works and described the role of animal spirits and were permanently interested in accounting as an image of economic reality, we initiated this study, which intends to capture a few correlations between accounting choices and options, the managerial decisions, and the... '*animal spirits*'.

As we can identify some new trends in the literature, such as environmental (green) accounting or accounting in a knowledge-based economy, we think that it could be of interest to research into the issue of accounting in the economy influenced by 'psychological-emotional motivational factors'. Akerlof and Schiller (2010) noted that, in order to understand how economies work and how we can manage and develop them, we should be aware of the structure of thoughts that animate people's feelings and ideas. They explained that the term '*animal spirits*', originating in Latin, with a history that covers at least two thousand years, designated the '*nervous fluid*', which was believed several centuries ago to make people feel and move like a '*spiritual blood*'. Then, based on our interest in the research of management decisions about accounting options and strategies, we have carefully studied how the human cognitive system works, this system being responsible for our choices and decisions.

Thaler and Sustein (2008) pointed out that the human brain functioning mechanism involves a clear distinction between the two categories of thinking, the intuitive and automatic one and the reflective and rational thinking, respectively. Referring to managers,

Thaler and Sustein (2008) noted that they should also be architects who look for opportunities in the way work is structured to improve behaviour to the benefit of individuals, customers and the organisation. The same authors state that managers need to carefully consider costs and benefits of possible ways to change the choice of architecture in order to reduce or eliminate the bias.

On the other hand, Gino (2013) mentions that she noticed experienced managers who plan carefully for their negotiations, but end up with very different deals than those they had planned, because they were caught up ‘in the heat of the moment’. In her work, Gino (2013) makes a difference among three categories of forces influencing our decisions in ways we commonly fail to anticipate: forces from within ourselves; forces from our relationship with others; and forces from the outside world. Regarding the accounting literature consulted, interested in the psychological factors influencing financial accounting, the mandatory or voluntary financial reporting, or the exercise of professional judgment and decision-making, we considered that the studies carried out can be structured as shown in Table 1.

As stated above, the decisions and also human judgements in the social and also economic life are generally rational. Yet, the events have shown that both choices and decisions are often influenced by other—sometimes unseen—subtle factors, that can, nevertheless have a decisive impact; see the economic and social factors triggering financial crises and those which fueled them (Vranceanu, 2005). We live in dynamic times when everything is interconnected. Starting from this premise of activeness prevalent economy, finance and business in general, our purpose was to capture some of the subtleties and vulnerabilities of the professional judgement process and decision-making in accounting. Thus, in order to

Table 1. Psychological aspects encountered in the literature in correlation with several accounting issues.

Main topics approached in the accounting literature	Selection of consulted authors
1. Irrational behaviour in accounting policies	Tokuga and Miyauchi (2011), Nakano (2004), Bikhchandani and Sharma (2001), Hirshleifer and Teoh (2009), Hirshleifer, Hou, and Teoh (2009), Wittke (2013)
2. Assessment of accountants cognitive abilities	Cardoso, Barcellos, and Bosco de Sales (2014), Bonner (2008), Douppnik and Richter (2003, 2004), Merkl-Davies and Brennan (2011)
3. Personal values and ethical judgement of accountants and auditors	Alteer, Yahya, and Haron (2013), Wennerholm and Larsson (2006), Valentine and Rittenburg (2004), Sparks and Pan (2010), Karacaer, Gohar, Aygun, and Sayin (2009), Libby et al. (2002), Eriksson and Mehanovic (2012)
4. Incentives and managers irrational behaviour	Gneezy, Meier, and Rey-Biel (2011), Ariely (2010), Healy and Palepu (1995), Botosan (1997), Easley and O’Hara (2004)
5. Psychology theories applicable to financial accounting issues and financial decisions	Koonce and Mercer (2005), Bogdan et al. (2009), Libby et al. (2002), Garling, Kirchler, Lewis, and van Raaij (2010), Hirshleifer and Teoh (2009)
6. Investors’ behaviour and disclosure formats of financial information	Cotter and Zimmer (2003), Hodge, Kennedy, and Maines (2004), Bernard and Schipper (1994), Shleifer (2000), Koonce, Lipe, and McAnally (2005)
7. Understanding when and how analysts’ incentives influence their research reports	Francis and Philbrick (1993), McNichols and O’Brien (1997), Bradshaw (2004), Edwards and Smith (1996)
8. Limited attention and disclosure of financial information	Hirshleifer and Teoh (2003), Fischer and Verrecchia (1999), Verrecchia (2001), Peng and Xiong (2006), Libby et al. (2002), Kothari, Sabino, and Zach (2005), Daniel, Hirshleifer, and Teoh (2002), Hirshleifer, Lim, and Teoh (2002)
9. Behavioural accounting issues and the process of improving accounting rules and regulation	Kachelmeier and King (2002), Waymire and Basu (2008), Hirshleifer (2008), Hirshleifer and Teoh (2003), Glover, Ijiri, Levine, and Liang (2005)
10. Cognitive accounting research	Peters (1993), Hogarth (1993), Gibbins and Jamal (1993), Frederick and Libby (1986), Libby (1983), Libby and Luft (1993)

Source: Author’s projection, based on the study of papers and works of authors mentioned.

investigate the correlations between the universe of accounting options, managerial decisions, creative accounting phenomenon and irrational elements, we have identified five different aspects affecting human decisions that are likely to influence the behaviour of a future professional accountant or even a manager. These are: choice made under uncertainty and risk; decision-making; emotional score; incentives and decisions; creativity, choices and decisions.

2.1. Choice under uncertainty and risk

Every second of every day, we are choosing, and there are always alternatives. Schwartz (2004) highlighted that choices enable us to control our destinies and to come close to getting exactly what we want out of any situation. Kahneman (2011) developed and discussed the cognitive and psycho-physical determinants of choice in contexts of risk and risk-free, in almost all his works. Starting from the well-known prospect theory of Kahneman and Tversky (1979) and the assumption that the presupposition of risk aversion has played a central role in economic theory, our intention is to identify a correlation between the value function of the authors recalled, aversion to risk and loss, and conservatism in accounting.

By conservatism we understand the prudent, moderately pessimistic attitude, even before making accounting options and strategies and it requires, in our vision, the action of prudent principle with all its effects on accounting policies and financial reporting. Kahneman and Tversky (1979) demonstrated, by the value function defining the estimation theory of chances, risk aversion, expresses the intuition that a loss of X (as value) causes more aversion than arises attraction a gain of the same value X . Kahneman (2011) argued that loss aversion explains people's reluctance to bet on a fair coin for equal stakes; in other words, the attractiveness of a possible gain is by no means sufficient to compensate the repulsive idea of a possible loss.

Thus, according to Kahneman (2011), seeking the risk in case of loss is a solid result, particularly when the probabilities of loss are substantial. Intrigued by the foregoing and by the works of the authors invoked, we proposed in our study to include two questions weighing the assertions of Kahneman (2011), who observed that all the analyses of rational choice incorporate two principles: predominance and invariance.

According to Kahneman (2011), under the principle of predominance, if perspective A is at least as good as perspective B in every respect and better than B in at least one aspect, then A must be preferred to B . The same author pointed out that invariance requires that the order of preference for the different perspectives should not depend on the manner in which they are described, but he noted that it generally cannot be satisfied.

2.2. Decision-making

Kahneman (2011) believes that making decisions is like speaking in prose: people do it all the time, consciously or unconsciously, and the study of the decision has in view both normative and descriptive problems. Schwartz (2004) draws attention to the fact that choosing well is difficult and most decisions have several different dimensions.

Instead, Kahneman (2011) believes that the decision-making problems can be described and classified in multiple ways, giving rise to different preferences, contrary to the invariance criterion of rational choice, debating also more and more the relationship between

decision-making values and experiential values. According to Schwartz (2004), most good decisions will involve these steps: figure out your goal or goals; evaluate the importance of each goal; array the options; evaluate how likely each of the options is to meet your goals; pick the winning option; later use the consequences of your choice to modify your goals, the importance you assign them and the way you evaluate future possibilities. And, as realistically and clearly Fox and See (2003) noted, most decisions in life are gambles. Baron (2007), analysing the values and generally the elements underlying the decision-making process, is of the opinion that a promising approach to the problem of measuring utility and making difficult decisions is that of a multi-attribute utility theory (M.A.U.T.) and the idea is to separate utility into attributes.

Zamfir (2005) discusses the fact that the decision strategies are characterised by a specific vulnerability to uncertainty and the mechanism of uncertainty artificial absorption are characterised by investing the decision with added-value. Einhorn and Hogarth (1981) and Libby and Luft (1993) developed and described the main determinants of reasoning and of the decision-making process in accounting, taking into consideration the fact that a performing decision is a function determined by the skills, knowledge and motivation that come from the environment. Zamfir (2005), referring to the individual capabilities of the decision-maker, notes that their over-evaluation can take a lot of forms that have in view too much faith in grace, intelligence, knowledge, intuition, luck or chance that person has.

Of course, in general people are rational and base their decisions on knowledge but many times for reasons of vulnerability to risk and uncertainty there are factors such as habit, tradition, patterns and other such irrational factors that influence decisions. We are rational, but life is too short to always act relying solely on reason and knowledge.

2.3. Emotional score

According to Kahneman (2011), the system of rewards and punishments shapes our preferences as individuals and motivates our actions similarly to the incentives provided by the social environment. He based his observation on his colleague Richard Thaler's research in the field of mental accounting which affects human behaviour. Thaler (1999) defined mental accounting as the set of cognitive operations used by individuals and households to organise, evaluate and keep track of financial activities.

In Thaler's (1999) opinion, three components of mental accounting receive in research the most attention: the first component captures how outcomes are perceived and experienced and how decisions are made and subsequently re-evaluated, the second component of mental accounting involves the assignment of activities to specific accounts and the third component concerned the frequency with which accounts are evaluated and 'choice bracketing'. According to Kivetz (1999), DeGeorge, Patel, and Zeckhauser (1999) and Odean (1998), one important application domain of mental accounting is in finance and accounting, where investigators and researchers examined empirically some predictions derived from mental accounting regarding both individual investment decisions and firm behaviour.

Thus, according to Kahneman (2011), financial research revealed a massive preference for the sale of winning shares rather than losing shares, a bias which received in the literature the opaque title of: *the effect of moods (disposition effect)*. The disposition effect is an example of narrow framing. Previous authors like Odean (1998) and Shefrin and Statman (1985), analysing the disposition effect, assumed that losses and gains depend on the difference

between the selling price and the purchase price of the stock shares. The purchasing price is, thus, the reference point deducted from the selling price in evaluations of the monetary value of a trade. Kahneman's & Tversky's (1979) prospect theory demonstrated that if another reference point is adopted this would lead to the monetary value of the trade framed as a larger or smaller gain or loss, or as a loss instead of a gain or the reverse.

Kahneman (2011) explains that the decision to invest additional resources into a losing account, when better investments are available, is called *sophistic fallacy of failed/sunk costs*, a costly mistake that is observed in both major and minor decisions. For example, to drive through blizzard because a ticket was paid is a failed/sunk cost fallacy. In Kahneman's (2011) opinion, the sophisticated fallacy of sunk costs (sunk-cost fallacy) keeps people in bad jobs, unhappy marriages and unpromising research projects too long, yet research suggests that the fallacy may be overcome in certain contexts.

2.4. Incentives and decisions

Ariely (2010) emphasised that we are tempted to deduct that there is a connection between the magnitude of stimulus and the ability to act better. Thus, sometimes, our intuitions regarding the connections between motivation and performance are accurate; other times, reality and intuition do not correspond. The author investigated the possible correlations between incentives (payments, shocks) and performance and showed that, if the motivation level is low, adding the incentives helps increase the performance. Yet, as the level of basic motivation increases, adding the incentives may have a kick effect, reducing the performance and creating what psychologists often call 'an inverted-U relationship'.

Balaciu, Bogdan, Feleagă, and Popa (2014) highlighted the fact that being careful about the signs they want to send to the stakeholders, managers cannot ignore the 'messages', even though they are subliminal, from their relationship with the key players in the creative accounting game: the accountants and the auditors. Yet, the decisions are theirs. Also, most of the time, they have also a less rational component, standing the psychological pressure, many times more difficult to bear, for the performance indices that must be achieved or maintained. This is in agreement with the experiment initiated by Ariely, Gneezy, Loewenstein, and Mazar (2009) in order to test the efficiency of the financial incentives as an instrument of performance increase. They varied the size of the bonuses that the participants could get if they fulfilled their duties and measured the effect of different levels of the bonus on performance. As Ariely (2010) states, the conclusion was crystal clear: the payment of some higher bonuses may determine better performance when it is about simple, mechanical tasks, yet it is the reverse when the participants are asked to use their brains—what usually happens also when the companies pay the executive managers very high bonuses.

2.5. Creativity, choices and decisions

Some recent research works, like the one conducted by Batey and Furnham (2006), examined the relationships between creativity, intelligence and personality. Also, other authors are more interested in how psychology influenced assessment of creativity and which factors promote or inhibit creativity (Amabile, 1982; Feist, 1998; Finke, Ward, & Smith, 1992; Shalley & Gilson, 2004). Csikszentmihalyi (2007) pointed out that, by its very nature, creativity is not just something that happens in one's head, but, to be able to declare an idea

or accomplishment as 'creative', we have to compare it with various existing criteria or standards.

Thus, Livio (2005) noted that creativity always implies relations between at least three components: creative person, the field in which the creative act appears and the team of players or practitioners who act as gatekeepers and judges. As Livio (2005) remarked, understanding the working system of creativity does not only intrigue the specialists in cognitive sciences, neurologists and educators, but big companies and corporations also continually strive to find ways to cultivate creativity and innovation of employees. The psychologist Winner (1996) noted, based on the study drawn up on gifted children, that the creators are independent, dominant, concentrated people who know how to risk and push the throttle hard. Studying certain qualities that are heavily involved in the creation process, psychologists Dacey and Lennon (1998) focused on the tolerance to ambiguity, that is the ability to think, work and remain open minded in situations where the rules are unclear, there are no guidelines or where the usual support systems (e.g., family, school, society) collapsed. Csikszentmihalyi (2007), following the interviews from dozens of people working in various fields, has compiled a list of ten dimensions of complexity—ten pairs of apparently antithetical characteristics that are often present simultaneously in the creative minds: impulsive outbursts that punctuate the silence and rest periods; evidence of wit, and also extreme naivety; significant jumps between the extreme limits of responsibility and irresponsibility; an ingrained sense of reality, with a large dose of fantasy and imagination; alternated periods of introversion and extraversion; simultaneously humble and proud behaviour; psychological androgyny—without a clear adherence to sex role stereotyping; rebellious and iconoclastic attitude, yet respectful of the industry and its history; evidence that they are passionate about what they do yet objective towards their work; mixed feelings of grief and pain with mirth and joy.

A very interesting study is one, by Gino and Ariely (2012), which aimed to test whether creativity increases dishonesty. The authors, in five empirical studies, showed that participants with creative personalities tended to cheat more than less creative individuals, and that dispositional creativity is a better predictor of unethical behaviour than intelligence. The obtained results of Gino and Ariely's (2012) empirical study provide evidence for an association between creativity and dishonesty, highlighting a dark side of creativity. Of course, this dark side of creativity is well known in accounting and financial reporting and, for this reason, the study conducted by Gino and Ariely (2012) is considered very valuable due to the fact that it offers precious insights into the relationship between creativity and dishonest behaviour with several important implications for the management of business's and to the future of accounting policies and financial reporting.

The elements of psychological irrationality presented above were recognised and analysed based on the works of authors listed in Table 2, building up the theoretical framework of our study.

3. Research objectives and methodology

The essential aim of our research is to identify possible correlations between the psychological variables that previously were the subject of research (Balaciu et al., 2014; Bogdan, Pop, Meşter, & Balaciu, 2009) and the accounting professional judgement, as well as the act of decision-making in accounting. The specific objectives of the research are to: identify those

Table 2. Theoretical framework of the study.

Factors which may affect the behaviour of professional accountants and managers	Psychological insights	Authors reviewed
Choice under uncertainty and risk	Risk aversion under prospect theory; baggage of personal and professional development of each individual; patterns; herd behaviour	Schwartz (2004), Kahneman and Tversky (1979), Kahneman (2011)
Decision-making	Rational choice; experiential values; steps in the decisional process; analysis and measurement of decision's utility; vulnerability to risk and uncertainty	Kahneman (2011), Schwartz (2004), Fox and See (2003), Baron (2007), Keeney (1992), Zamfir (2005), Peters (1993), Hogarth (1993), Gibbins and Jamal (1993), Frederick and Libby (1986), Einhorn and Hogarth (1981), Libby and Luft (1993)
Emotional score	Disposition effect; sunk costs fallacy	Kahneman (2011), Thaler (1999), Kivetz (1999), DeGeorge et al. (1999) Odean (1998), Shefrin and Statman (1985), Kahneman and Tversky (1979)
Incentives and decisions	Incentives: payments and bonuses and performance; 'inverted U relationship'; signals and messages	Ariely et al. (2009), Ariely (2010), Balaciu et al. (2014)
Creativity, choices and decisions	Creativity components; tolerance to ambiguity; dimension of complexity in creative minds; creativity increases dishonesty?; dark side of creativity and dishonest behaviour in the management of business	Batey (2012), Batey and Furnham (2006), Feist (1998), Finke et al. (1992), Amabile (1982), Shalley and Gilson (2004), Csikszentmihalyi (1997), Livio (2005), Winner (1996), Dacey and Lennon (1998), Gino and Ariely (2012)

Source: Author's projection based on previous works of mentioned authors.

aspects that take into account the influence of psychological variables and their impact on the exercise of professional accounting judgement and the act of making accounting decisions; create correlations between the variables mentioned and the accounting techniques or accounting policies through the method of investigation; test the correlations between the psychological variables identified and the creative accounting techniques, the accounting policies selected, the professional judgement exercised or the act of decision-making in accounting.

The research was carried out between May and June 2014. Our sample consists of accounting masters students in three of the Romanian representative universities. It is not a representative sample, as its choice does not comply with the rules of probabilistic samples. It is an availability and opportunity sample; therefore, our research is an exploratory one. Libby and Rennekamp (2012) and Libby, Bloomfield, and Nelson (2002) noted that students can be used as participants when their knowledge is sufficient for the task. Nevertheless, Gabriels and Van de Wiele (2005) showed that accounting students tend to find creative accounting less acceptable than non-accounting students. Thus, M.A. students in Accounting were questioned about their perception regarding the creative accounting phenomenon and were also investigated about their personality traits such as: willingness to take and assume risks, making choices and taking decisions and their capacity of creativity. We intend to carry out our study on 144 M.A. students.

The distribution of questionnaires received from students was as follows: 35 questionnaires from the Bucharest University of Economic Studies, 42 questionnaires from Aurel Vlaicu University, Faculty of Economics Arad and 25 questionnaires from the University of Oradea, Faculty of Economics. Forty-two students did not respond to our request to fill in the questionnaire. The questionnaire comprises seven questions about the respondent's personal profile and continues with 24 closed questions, a semi-closed question and an open question, regarding M.A. students perception on the existence and expressions of the creative accounting phenomenon. In compiling the questionnaire we used the Likert scale with five levels of measurement. The questionnaires were set up and posted on an Internet page ensuring the anonymity of the respondent. Also, we used the possibility of direct approach at class. We have used Cronbach's alpha, in order to check the internal consistency of our questionnaire, the value of the statistic being 0.81, which confirms its reliability.

Based on the theoretical framework of our study presented in section 2 we have elaborated the following research assumptions to test the possible links between the perception of M.A. students on accounting issues and the psychological aspects discussed above:

H1: Choice under risk and uncertainty affects the creative accounting phenomenon and it is closely correlated with the interest pursued by the managers in choosing accounting policies.

H2: The strategic accounting related managerial decision-making process is influenced by the individual capacities of the decision-maker, the managers basing their decisions mainly on knowledge.

H3: Disposition effect, employed by Kahneman (2011) in explaining the emotional score, is correlated with the choice of income maximisation or minimisation policy.

H4: There is a link between the financial incentives given by managers (to their accountants) in order to beautify their financial statements and the use of creative accounting techniques.

H5: Individual creativity and the ability to find creative solutions in everyday life are correlated with the choice made by a professional accountant to use creative accounting to improve the performance of the company.

We accepted or rejected these hypotheses and we also used a descriptive analysis of the answers provided by the sample subjects, in order to interpret the results.

4. Descriptive statistics

The first general aspect which has been emphasised with the help of the survey questions is the distribution of students according to gender. The majority of students answering the survey questions were women. Another variable characterising the sample of students from the demographical point of view is age, most students were within the age group 18–25; moreover, 98% of the M.A. students were under 35 years old. We also wanted to emphasise the distribution according to their professional history.

We have noticed that most of the M.A. students (71%) had previously had an accounting related job, 83% of them are currently employed, out of which 71% work in an accounting related job. Half of the investigated students that are currently employed are satisfied with their wage. The most important part of our research has as purpose the determination of the students' perception regarding creative accounting techniques.

Thus, the students in our sample were asked about their opinion on the phenomena that encourage the existence of creative accounting. Most of the students agree to the fact that managers' expectations regarding the financial position and performance of the company mostly influence and encourage the existence and expressions of creative accounting. More than three quarters of the students (77.1%) answered they use their knowledge when taking decisions, 16.7% of them are using their intuition, the remaining 6.3% are taking habit-based decisions. When asked to choose between: (a) a 250 lei profit or (b) a 25% chance for a 1000 lei profit and 75% chance to win nothing, a majority of 54.2% chose a certain 250 lei profit. Being asked to choose between: (a) a 750 lei loss or (b) a 75% chance for a 1000 lei loss and 25% chance not to lose anything, most of the students (85.4%) chose the second answer. One of the questions was supposed to measure the risk propensity of our respondents, and the answers showed that the majority of them have an aversion towards risk. Most of our students believe that the managers' objective is related to a maximisation policy for a good financial position and performance of the company.

5. Statistical testing of hypotheses and the bivariate analysis

In this stage of our research we tried to validate the research hypotheses in our sample of students. For this purpose, each formulated hypothesis was analysed and interpreted, using specific statistic calculations, qualitative appreciations and direct observations of data gathered. For cross-tabulations and other statistical calculus we have used SPSS software.

Regarding the first research hypothesis, we tried to investigate a possible correlation between the students' propensity towards risk and uncertainty and the expressions of creative accounting phenomena, as well as the interest pursued by the managers in choosing accounting policies. For the validation of this hypothesis we have analysed the answers to the following questions: II.2. Supposing the weather forecast said today might be a rainy day, will you take the umbrella with you?, II.4. Choose between: (a) a 250 lei profit or (b) a

25% chance for a 1000 lei profit and 75% chance to win nothing, II.5. Choose between: (a) a 750 lei loss or (b) a 75% chance for a 1000 lei loss and 25% chance not to lose anything, as well as II.1. Which of the following phenomena you think encourages the existence and expressions of creative accounting?, and II.8. The managers' objective is related to ... (students were asked to give scores for each item from a list).

(H1a) For the first three questions used for the validation of the first part of the H1 research hypothesis (the correlation between the students' propensity towards risk and uncertainty and the expressions of creative accounting phenomenon), we have assigned a 0 or 1 score, the latter being assigned for those answers indicating a propensity towards risk. Starting from these scores, we have determined an average for each student, ranging from 0–1, the highest value indicating a maximum propensity of the student towards risk. We also computed an average score for the answers to question Q II.1, ranging from 1 (strongly disagree) to 5 (strongly agree)—the higher the value, the more our students accept the existence of certain expressions of creative accounting. Pearson's correlation coefficient for the two average scores is 0.224, which is also significant at the 0.01 level (2-tailed), which indicates a strong correlation between the students' propensity towards risk and uncertainty and the expressions of creative accounting phenomenon. We can conclude that the H1a research hypothesis is, therefore, validated.

(H1b) The questions based on which we will test the validity of this research hypothesis (a possible correlation between the students' propensity towards risk and the existence of an interest pursuit by the managers when choosing the accounting policies) are II.2, II.4, II.5 and II.8. Since, when answering question Q II.8, students were asked to give scores for each item from a list, we have computed an average score for each student, ranging from 1 (strongly disagree) to 5 (strongly agree to a situation, indicating the acceptance by the students of the existence of an interest pursuit by the managers when choosing the accounting policies).

Pearson's correlation coefficient for the two average scores is 0.072, which is not significant at the 0.01 or 0.05 level (2-tailed), which indicates a very weak or non-existent correlation between the students' propensity towards risk and the existence of an interest pursuit by the managers when choosing the accounting policies. Our conclusion is that the H1b research hypothesis is, therefore, not validated.

For the validation of our second hypothesis we have analysed the answers to the following questions: II.12. When taking a strategic managerial decision, the compliance to accounting and fiscal regulations should be a priority?, II.13. When taking a strategic managerial decision, is the ethics and deontology important?, as well as, II.4. Choose between: (a) a 250 lei profit and (b) a 25% chance for a 1000 lei profit and 75% chance to win nothing. We have assigned scores ranging from 1 (strongly disagree) to 5 (strongly agree) for each answer to questions II.12 and II.13 and computed an average score for each student. In our opinion, the perception of the M.A. students that have a low propensity toward risk is that the managers will comply with the accounting and fiscal regulations as well as the professional ethics and deontology. The Chi-square value associated to the bivariate distribution between the average scores and answers to question II.4 is 4.38, the value is higher than 0, which indicates a correlation between the strategic accounting related managerial decision-making process and the individual capacities of the decision-maker, but the value is not statistically significant as the critical value for a 5% level of confidence and 2 degrees of freedom is 5.99, higher than our calculated value. The H2 research hypothesis is, therefore, not validated.

In order to test the correlation between the disposition effect employed by Kahneman (2011) in explaining the emotional score and the manager's choice of income maximisation or minimisation, we have analysed the answers to the following questions: II.6. Two fans plan to make a 250 km trip in order to see a concert of their favourite rock band. One of them, named Ion, has bought a ticket for the concert, the other (Vasile) was going to buy himself a ticket but he got one from a friend for free. It is going to snow heavily on the night of the concert. Which of the two friends is more likely to go to the concert despite the snowy weather? II.9. Would you maximise the income in order for the company to obtain a bank loan? II.10. Would you minimise the income, if the manager asks you to, in order to minimise the taxes paid by the company?

We have assigned scores for each answer to questions II.9 and II.10, ranging from 1 (strongly disagree, indicating a minimum propensity of the student towards using creative accounting) to 5 (strongly agree, indicating a maximum propensity of the student towards using creative accounting) and computed an average score for each student. The Chi-square value associated to the distribution of the answers for the average scores computed as described above and answers to question II.6 is 16.38, the value is higher than 0, which indicates a correlation between the disposition effect invoked by Kahneman (2011), in explaining the emotional score, and the choice of income maximisation or minimisation policy. The value is statistically significant as the critical value for a 5% level of confidence and 8 degrees of freedom is 15.5, lower than our calculated value. The H3 research hypothesis is, therefore, validated.

Considering those outlined in section 2.4., we examined if there is a link between the financial incentives given by managers (to their accountants) in order to beautify their financial statements and the use of creative accounting techniques.

For the validation of this hypothesis we have analysed the answers to the following questions: II.11. Would you distort the financial statements as the manager wants them to be, if you get promoted and he gives you a raise? II.9. Would you maximise the income in order for the company to obtain a bank loan?, II.10. Would you minimise the income, if the manager asks you to, in order to minimise the taxes paid by the company? II.14. Would you change the depreciation plan of the fix tangible assets of the company in order to alter the income, even if this accounting policy change would affect the correct representation of the events and transactions? II.15. Would you agree with the artificial increase of the provisions in the years with profit in order to minimise the income and the tax on profit, even if this accounting policy change would affect the correct representation of the events and transactions? II.16. Would you agree with the change of the valuation method of the inventories in order to control the income? II.17. Would you agree with the re-evaluation of fix tangible assets in order to increase the value of the own assets and the artificial increase of endowment capacity? In order to investigate this research hypothesis, we have assigned scores for each answer to questions II.9, II.10, II.14, II.15, II.16 and II.17, ranging from 1 (strongly disagree, indicating a minimum propensity of the student towards using creative accounting) to 5 (strongly agree, indicating a maximum propensity of the student towards using creative accounting). Pearson's correlation coefficient is 0.562, which is also significant at the 0.01 level (2-tailed). The H4 research hypothesis is, therefore, validated.

Based on section 2.5., we have formulated the last hypothesis and investigated a possible correlation between the individual creativity, the capacity to be creative and the choices made by professional accountants to use creative accounting to improve a company's performance.

For the validation of this hypothesis we have analysed the answers to the following questions: II.7. Do you believe you are being creative when you cannot open a jar and you take a towel in order to prevent your hand from slipping on it?II.23. The quality of the accounting information is being unwillingly altered by using creative accounting methods?II.8. Would you accept 'playing' with numbers in order to improve the company's financial performance, as long as you comply to the law?We have assigned scores for each answer to questions II.7 and II.23, ranging from 1 (strongly disagree, indicating a minimum acceptance by the students of the existence of certain forms of creative accounting) to 5 (strongly agree, indicating a strong acceptance by the students of the existence of certain expressions of creative accounting), and we have computed average scores for each student. We have also assigned scores to answers to question II.18, ranging from 1 (strongly disagree, indicating a minimum acceptance by the students of using creative accounting) to 5 (strongly agree, indicating a maximum acceptance by the students of using creative accounting techniques). Pearson's correlation coefficient for the two average scores is 0.026, not significant at the 0.05 level (2-tailed). The H5 research hypothesis is, therefore, not validated. This is not in agreement with the findings of Cernusca, David, Nicolaescu, and Gomoi (2016) which showed in their study, conducted on accounting students and professionals, that creative people, by their very nature, will often resort to creative accounting techniques than less creative people.

6. Conclusions, limitations and further research

Our study is experimental. The reason for choosing the M.A. students as subjects of our investigation is that they are at the beginning of their professional careers, they are enthusiastic, still inexperienced and their reasoning and decision process involve more effort. Based on these considerations, the results of our study show that most of the students agree to the fact that managers' expectations regarding the financial position and performance of the company mostly influence and encourage the existence and expressions of creative accounting phenomenon and also that most of our students believe that the managers' objective is related to a maximisation policy for a good financial position and performance of the company.

We note that most M.A. students investigated are women under 25 years old and have jobs related to accounting. The statistical testing of research hypotheses developed by us has shown that, according to the M.A. students in Accounting, the aversion towards risk of individuals influences creative accounting, but it is not correlated with the interest pursued by the managers in choosing accounting policies. In their perception the act of managerial decision-making in accounting is not influenced by the individual capacities of the decision-maker to make decisions. Also, the M.A. students in Accounting believe the disposition effect, which explains the so-called emotional score variable used by Kahneman (2011), is correlated with the choice of accounting policy to maximise or minimise the company's income. Surprisingly, the perception of the investigated subjects in our experimental study is that there is no correlation between the creative capacity of an individual in general and the use of creative accounting by professional accountants to improve the performance of the entity. This lack of correlation indicates a weakness of our experimental study, in the light of the questions put up in the questionnaire, but also a lack of attention from the respondents to those questions aimed to investigate the creative ability of an individual. It may also be a lack of emphasis on questions that were considering questioning aspects of

personality traits and influences on decision-making. We might explain this immaturity on the investigated subjects' age, which was on average between 18 and 25 years. Following Gino and Ariely (2012), we intend to continue our research by improving those aspects of our experimental study where we have detected weaknesses or inconsistencies, and also to further investigate more thoroughly the possible correlation between the creative capacity of an individual and the call to creative accounting practices, encountered in any entity carrying out economic activities likely to generate profit.

The results of the survey reveal, in our opinion, that certain aspects of the exercise of professional accounting judgement and the making of financial and accounting decisions contains elements less visible and more difficult to understand at first glance, as they are made up of behavioural elements. The study finds its limitations primarily in the choice of subjects to be investigated, the selection of psychological variables and the statistical testing of hypotheses developed. In future studies we intend to continue our approach by expanding the exploratory investigation on professional accountants and auditors and the mathematical modelling of the alleged correlations between the psychological variables and aspects related to the exercise of professional judgement and decision-making.

Disclosure statement

No potential conflict of interest was reported by the authors.

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