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Stowarzyszenie Księgowych
w Polsce

The role of justification in individual and group decisions about indirect cost allocation – evidence from Poland

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Abstract

In examining the justifications of accounting decisions which refer to measuring the value of the inventory for the purposes of financial accounts, the role of the person in the creation of accounting information is argued. The role of such research is to show that accounting theory assumes ideal circumstances when preparing information that is meant to represent economic phenomena in words and numbers. However, it is influenced by the behavior of the accounting practitioners and their perception of the economic reality in which the decision is made. The activities of these practitioners are silent but influential in terms of the quality of financial information. The study on 274 young practitioners focuses on the essence of their justifications and analyzes the relationship between the arguments raised by the individuals and decision stability after a group discussion. According to the results, the participants who justified their choice using sound, substantive points less often changed their decision during the group discussion. Our findings develop an understanding that, in the application of accounting principles, and, furthermore, in producing financial reports, substantive and non-substantive (biased) justifications play a role in the stability of accounting choice. Incorporating cognitive biases into the process of developing the justification can influence the accounting choice and alter future decision-making processes, because such a person is more likely to succumb to the pressure of the group.

Keywords: decision-making process, accounting choice, financial reporting, cognitive biases, group pressure.

Streszczenie

Rola uzasadnień w indywidualnym i grupowym podejmowaniu decyzji o alokacji kosztów pośrednich – przykład z Polski

Artykuł prezentuje wyniki badania roli czynnika ludzkiego w tworzeniu informacji w systemie rachunkowości przez analizę uzasadnień podejmowanych decyzji, które odnoszą się do pomiaru wartości zapasów na potrzeby rachunkowości finansowej. Teoria rachunkowości zakłada istnienie idealnych warunków przygotowywania informacji finansowych, które mają odzwierciedlić sytuację finansową jednostki za pomocą liczb oraz opisu. Wartość opisanych w artykule badań polega na wskazaniu, że w warunkach rzeczywistych na informacje tworzone w systemie rachunkowości mają wpływ zachowanie praktyków rachunkowości i subiektywny odbiór rzeczywistości ekonomicznej, w której jednostka prowadzi działalność gospodarczą. Zachowanie księgowych stanowi niedostrzegalny, ale wpływowy czynnik, szczególnie w kontekście jakości informacji tworzonych w systemie rachunkowości. Badanie 274 młodych księgowych skupia się na uzasadnieniach podejmowanych decyzji oraz analizuje relacje między argumentami uwzględnionymi przez osobę podejmującą decyzję a niezmiennością podjętej decyzji po grupowej

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dyskusji problemu. Uzyskane wyniki wskazują, że osoby uzasadniające decyzję klarownymi, merytorycznymi przesłankami znacznie rzadziej zmieniały ją po dyskusji w grupie. Wkład przeprowadzonych badań w dotychczasową literaturę dotyczy wskazania roli merytorycznych i pozamerytorycznych (heurystycznych) uzasadnień w aplikacji zasad rachunkowości (a w dalszym kroku w przygotowywaniu sprawozdań finansowych), jak również w stabilności podjętych decyzji. Heurystyczne wnioskowanie w procesie podejmowania decyzji może wpłynąć na dokonany wybór oraz zmienić przyszłe decyzje, ponieważ stosowanie heurystyk zwiększa podatność na presję ze strony członków grupy, w której dyskutuje się problem z zakresu rachunkowości.

Słowa kluczowe: podejmowanie decyzji, elastyczna rachunkowość, sprawozdawczość finansowa, heurystyki, wpływ grupy.

Introduction

Behavioral sciences have a long history of influencing accounting research. It is well known that an individual's behavior impacts the preparation of financial reports, auditors' judgments, as well as information aimed at managing decisions (Kwok, Sharp, 1998; Meyer, Rigsby, 2001; Birnberg, 2011; Brown, Popova, 2016; Simnett, Trotman, 2018). The interests of behavioral accounting research are applicable to individual respondents or to an aggregate, such as partners, workgroups or organizations (companies) (Towry, 2003; Coletti et al., 2005; Carpenter, Reimers, 2013). Regarding the aggregate construct, many research papers deal with audit committees, budgeting, organizational change and culture, and control systems (e.g., Lukka, 1988; Roxas, Stoneback, 1997; Coletti et al., 2005; Mahama, Cheng, 2013; Luft, 2016). The literature presenting the individual construct is much more extensive and encompasses ethical and moral issues, independence, performance, participation, trust, satisfaction, stress, tension, and roles, among others (Trotman, et al., 2011; Birnberg, 2011). Although we may find many articles focused on individuals, the authors have not found any literature dealing with the justification of accounting choices. One can only find studies of ethical arguments (Endenich, Trapp, 2017; Hiekkataipale, Lamsa, 2017), analysis of judgments made after the decision-making process (Baiada-Hireche, Garmilis, 2016) or managerial incentives that serve as drivers for business decision and activities (Lail et al., 2017).

On the other hand, the scientific discussions clearly indicate the ambiguity of financial reporting regulations, which results in accounting relativism (McSweeney, 1997; Zambon, Zan, 2000). First of all, accounting is contingent upon other disciplines that historically have been kept apart from accounting, e.g., economics, knowledge about organizations, informational technology, and cognitive disciplines related to decision-making (Scapens, Macintosh, 1996; Buchan, 2005). Second, accounting is used in a social context, and this is why the perception of reality is also important for its practice (Salvary, 1996; Puxty, 1997; Alexander, Archer, 2003; Mattessich, 2003; Lee, 2006). Mattessich (1995) states that accounting cannot be comprehended without the notion of applied discipline, and that the accounting system (and accounting standards as well) is meaningless without a purpose to be fulfilled. Accounting abstractions describe observable economic phenomena, thus the people practicing accounting are subjective as the depiction of economic conditions requires them to encompas their own opinions. Subjectivity, biased opinions, and choices are associated with the way the decision-maker perceives the social and economic environment in which the entity does business, as no enterprise operates in a vacuum. However, the nature of the arguments which are taken into consideration when making accounting choices is uncertain.

Therefore, accounting data can be contaminated by preconceptions about the superiority of algebraic accounting methods, or professional habits over a reliable depiction of the effects of transactions and economic circumstances on resources and claims. The multifaceted decision-making process involves identifying and selecting a specific course of action that should achieve an explicit goal. The objective of general purpose financial reporting is to provide financial information about the reporting entity that is primarily useful to existing and potential investors in making decisions related to providing scare resources to the entity (*Conceptual Framework…*, 2018). The decision-making literature shows that the purpose of financial reporting might be dominated by the short-term objectives of the decision-makers or by situational characteristics (Bonner, 1999; Trotman et al., 2011; Lail et al., 2017).

On this basis, we anticipate that explaining accounting choices is not narrowed down to simplified economic rationality or individualistic utility maximization. In our opinion, the decision-making process in accounting is much more complex, and it encompasses many social facets, even contradictory ones. Moreover, we believe that being aware of the existence of contamination is important when it comes to the stewardship position of accounting professionals and the further development of accounting theory. The paper assumes that decision-making in financial accounting is based on more than just substantive justifications, and because of this, the faithfulness of financial reporting might be influenced by the behavior of the accounting practitioners.

This article aims to further our understanding of the role of biased justifications made when deciding about cost allocations that influence inventory measurement. In our study, we investigate young accounting practitioners' justifications under accounting standards that allow for multiple alternative methods. Given that all choices under consideration follow the present accounting regulations, it is essential that arguments for a certain choice are substantive and directed at the general purpose of financial reporting. In our study, we focus on describing and explaining the real decision-making processes and provide strong evidence for non-substantive reasoning during the decision-making process, referring to accounting choice.

As all the alternative accounting solutions to choose from which are described in the scenario are equivalent, we hypothesize that there is no correlation between the type of justification given by the respondents and the chosen accounting solution of the problem presented in the scenario. However, our further hypothesis assumes that accountants who justified their individual decisions with substantive arguments are less likely to change the decision after a group discussion.

In order to verify the formulated hypothesis, we conduct a survey study on a group of 274 young accounting practitioners. The respondents had to choose one of the indirect cost allocation keys that determine the measurement of goods produced which were presented in the scenario. Then, we asked them to justify their choice. After this individual task, the respondents were asked to divide into four-person groups to discuss the problem and work out a group decision about the cost allocation key. The statistical analysis focused on the relationship between the chosen cost allocation key and the justification given by the respondent. Regarding the second hypothesis, we conducted a regression analysis to verify whether the type of justification (substantive or non-substantive) produced by the respondents explains the propensity to change the cost allocation key during the group decision. Both hypotheses are confirmed in the study. The results show the role of substantive accounting choice justification, which is important from the point of view of preparing financial reports. The awareness of cognitive biases (that may be connected with non-substantive justifications) may influence the quality of accounting method choice.

In light of the above, our research can be located in the context of positive accounting theory, although we do not assume that managers make accounting choices which best serve their self-interests or the effectiveness imperative. We contribute to the literature by verifying accounting justifications made in the decision-making process that have no incentives. Although there was neither an external nor internal direct influence on the decision-makers, such as psychological, organizational or ethical motivators, we observed that most respondents made decisions based on social and economic arguments. The true and fair reflection of economic phenomena was dominated by the justification derived from managerial and employee issues when the decision was made individually. After confronting the individual decisions with the other members of the group, the percentage of non-substantive justifications diminished significantly.

Our study can be viewed as exploratory research that investigates the different approaches to justifying accounting choices which refer to financial accounts, and which explores the role of justification in the stability of accounting choice. We used individual surveys and teamwork for our study, together with descriptive statistics and regression analysis. To the best of our knowledge, this is the first study in Poland that deals not with the decision made but with the arguments indicated individually and raised in a group decision-making setting. Moreover, we did not find a similar study in behavioral accounting research in highly regarded English language journals.

The structure of the article is as follows: first, we present the existing research that refers to decision-making in accounting with behavioral insights. Then we present our research questions, and we develop hypotheses based on the flexibility of accounting regulations. Later, we describe the respondents' characteristics and the methodology used. After presenting the results, we work out the discussion, which refers to the general purpose of financial reporting and the role of the nature of human cognitive processes in the creation of financial information. We end with conclusions and possibilities for future research.

1. Literature review

Since the 1970s, the behavioral research literature has grown, encompassing not only economics and finance but also accounting. Previous studies present a framework for a behavioral accounting review that identifies a classification based on (Birnberg, 2011):
a) focus groups:
   a. individuals,
   b. groups,
   c. organizations,
   d. environmental conditions,
b) research methods:
   a. experiments,
   b. surveys,
   c. archival data.

From the point of view of accounting behavioral research, a significant portion of research covers factors that influence decision-making done by individuals which is at odds with the self-interest and wealth-maximizing assumptions. Many individual choice studies analyzed factors that are related to the task setting, such as incentives, participation, accountability, systems interface, ethics, mood, and fairness. The largest group of studies is about incentives; they were checked mainly in experimental research with the usage of principal-agent theory, which is useful in hypotheses development (Hope, Wang, 2018). Taking into account the scope of this paper, it is important to note that different non-economical incentives matter in the decision-making process (Rutledge, Karim, 1999; Kunz, Pfaff, 2002; Abernethy et al., 2017).

In Poland, the behavioral accounting literature became a topic of interest less than ten years ago. Polish authors mainly deliberate the scope and methodology of behavioral research in accounting (Bąk, 2011; Szychta, 2013; Łazarowicz, 2015; Sulik-Górecka, Strojek-Filus, 2015; Artienwicz, 2018; Korzeniowska, 2018), the definition of behavioral accounting research (Nowak, 2015; Nowak, 2016a), and the theories used to hypothesize in behavioral studies (Nowak, 2015; Korzeniowska, 2017). They mainly refer to managerial accounting (Mazurowska, 2014; Gmińska, 2016) and auditing (Nowak, 2016b; Nowak, 2016c). There are also some publications that deal with ethical issues of decision-making in accounting (Cieciura, 2015). Most of the above-mentioned literature consists of a theoretical analysis of existing literature alone. Only a small part of the research is based on empirical studies (Kołodziej, Maruszewska, 2016; Nowak, 2016b) while few address decision-making within financial accounts (Maruszewska, 2014; Mazurowska, 2018). Based on the previous studies conducted by Polish researchers, it might be concluded that Polish behavioral accounting research is at the initial stage and further development is expected, as there are many scientists interested in the field. However, empirical studies, including surveys and experiments, should be used more often in any future research in order to catch up with the science in other regions of the world and to carry a value-added scientific discussion at a global level.

From the extant literature we can observe that the terms of particular contracts (Hodder, Hopkins, 2014; Agogila et al., 2015; Bouckova, 2015) or political processes (Puxy, 1997) provide incentives for decision-makers to adopt certain accounting choices to achieve particular financial reporting results (Lail et al., 2017). Most research dealing with incentives reflects systematic errors in decision-making processes (Abernethy et al., 2017). To the best of our knowledge, there is no study on the justifications made during the decision-making process.

For this reason, we concentrate on the justifications made by individual decision-makers in the accounting setting, which can help us investigate the deficiencies of the process factors that affect the final accounting choice. Along with the above, we examine how being part of a group can impact accounting decisions, as we have found no previous studies that searched for the relationship between individual justifications and the influence of a group on the decision-making process in the financial accounting environment. Although researchers have attempted to study the decision processes of groups, they focus was on group conflict or asymmetry of information in management accounting settings (Anderson et al., 2002; Rowe et al., 2008; Sanchez-Exposito et al., 2014).

2. Hypothesis development

As accounting standards move from being rules-based to principles-based, they are expected to improve the accuracy and relevance of financial reports. The principle-based model, as a more flexible solution, is generally viewed as giving accountants more latitude to reflect the substance of economic phenomenon. Taking into consideration real-world complexities and business nuances, this flexible solution seems to be the only possible acceptable formula nowadays. Secondly, accounting is purpose-oriented, as the *Conceptual Framework for Financial Reporting* (2018) introduces the objective of general purpose financial reporting. It predisposes accounting practitioners to think in terms of cause and effect relationships and – as a review of the literature shows – it might result in a distortion of the faithfulness of financial reporting.

The majority of behavioral accounting research focuses on different factors that influence accountants' decisions, mainly with the foundations of agency theory, which assumes the conflicting interests of the principal and the agent. Among those factors, the authors considered auditor independence, ethical judgment and reasoning, job stress, job satisfaction, and organizational culture. However, previous studies did not investigate the justification used by accountants when arguing about the choice he/she already made. This aspect of an accountant's work is especially important in the light of flexible legal regulations that leave accountants some freedom regarding measurement techniques, and especially the allocation of indirect costs to the value of finished products.

The described environment of the decision-making process requires high standards of professionalism to guarantee the faithful representation of financial information. It is not the complete depiction of economic phenomena, but neutrality that is endangered.

Including non-substantive arguments might suggest biases in the processing of the available and relevant data for a decision to be made. As a consequence, biased justifications can change the accountants' choice and alter future decision-making processes (Tan, Trotman, 2018).

On the other hand, accounting decisions often require a very broad view of the company's situation, going beyond algebraic methods only. Financial reports purport to represent economic phenomena in words and in numbers to describe the substance of the economic phenomena of the entity. The flexibility of accounting law is mostly related to year-end valuations and all allocation processes attached to measuring assets and liabilities, although the theoretical foundations of accounting have been stable for more than 500 years, e.g., by the means of accounting equation. Therefore, it seems valuable to learn the premises that accountants follow when choosing one of the several solutions available in a given situation. We assume that justifying the accounting choice may follow processes described in cognitive psychology and refer to the natural tendency to simplify a given situation and adopt frames that impose a selected perspective when analyzing the problem. Those often unconscious cognitive inclinations are automatic and result in hindering the deliberative decision-making process (Russo, Schoemaker, 1989; Kahneman, 2011; Evans, Stanovich, 2013; Pennycook et al., 2015, Kołodziej et al., 2018). Therefore, accountants may refer not only to substantive arguments, but they may also apply various cognitive biases which result from the habitual simplification of the decision-making situation.

According to the rich social psychology literature, decisions made by individuals and by groups often differ from each other, as other people can influence the decision-makers and – at the same time – the decision-makers can influence others (Hirokawa, Rost, 1992; Kerr, Tindale, 2004; De Dreu et al., 2007). In practice, the choice of accounting solutions available from within the legally accepted set may be a result of individual or group decisions made in the entity, depending on the size of the company (accounting department), the organizational structure or the internal procedures which have been adapted to accounting policymaking. In this light, the question about the influence of the group on the decisions made by accountants and the type of decision justification is even more interesting. Therefore, we formulated the following hypotheses:

1. *There is no correlation between the type of justifications given by respondents and the chosen accounting solution to the problem presented in the scenario.*

According to the scenario presented in the study, all of the described alternatives of accounting solutions to choose from were equivalents (in terms of the application of full costing) and in accordance with accounting regulations. We assumed that accountants who made a decision about the presented alternatives thought not only on the basis of merit but they also took into considerations other reasons, for example, those relating to the situation of the entity, e.g., the valuation consequences of a particular accounting method or outcomes that indirectly affect the employees of the entity. The respondents might take into account non-substantive aspects of a given situation, but as they valued the aspect differently, it might lead them to different solutions.

2. *Accountants who justified their individual decisions with substantive arguments are less likely to change their decision after a group discussion.*

With reference to the literature review, accountants who formulate justifications based on sound, substantive arguments may not be inclined to change their decision under the influence of the group. Accountants who make decisions based on biased, non-substantive reasoning, or those who do not have sufficient knowledge in the field, will be more likely to succumb to the pressure of the group.

According to the hypotheses formulated above, in our research, we focus on the role of justifications produced by accountants in accounting decisions, in particular, regarding the cost allocation solution. A thorough explanation of accounting choices is needed, as previous research did not develop hypotheses to predict or explain the role of biased justification in accounting choice decisions and in the stability of the decisions made. As in past studies, we also adopted the “information perspective,” but we rejected managers’ incentives to choose accounting method under certain rules of a bonus plan (as a part of a manager’s employment contract), debt contracts (affecting profitability), or political processes. Previous studies proved that managers behave opportunistically to increase (decrease) the reported income of the current period (Watts and Zimmerman, 1990). In our study, we do not concentrate on incentives, but – by means of observation and empirical verification – we adopt a perspective of neutrality of accounting numbers disclosed in financial reports. We contextualize the accounting decision-making process in a conceptual framework for financial reporting and its avoidance of biases used by accounting decision-makers.

3. Study design

A total of 274 respondents participated in the study: 237 women and 37 men (Mean age = 25.74, SD = 4.99) who were assigned to 71 different four-person groups. Almost half of the respondents (46.4%) already had work experience in an accounting office or accounting department. As a consequence of the relatively young age of the respondents, we observed non-seniority: 59.1% of the participants had worked for a maximum of one year and 21.9% for no longer than five years. Similarly, the majority of respondents (74.7%) had occupied the position of a lower or middle-level employee.

The study was conducted on accounting students at a public university and consisted of two steps: first, individually, then group decisions regarding the selection of one of the six proposed accounting solutions (or proposing their own solution) and presenting a justification for the selection made. The proposed solutions varied regarding the basis of indirect cost allocation in the conventional cost accounting system and the value of two groups of finished goods: product “1” and product “2”. Alternative calculations developed in the scenario referred to different indirect cost allocation keys, i.e., (1) direct materials, (2) direct salaries, (3) direct materials plus direct salaries, (4) total direct costs, (5) number of man-hours, (6) area of the workshop used for the production of a certain group of finished goods, and (7) other, to be proposed to the respondent.

The respondents were second-year bachelor degree students of accounting; therefore, they had the necessary knowledge to perform the task. Part-time students were also chosen, as there are many with previous professional experience in finance and accounting. The curricula had included financial reporting, and voluntary participation in the study was organized after lectures were completed.

The respondents read a scenario in which they were asked to put themselves in the position of newly hired accounting professional whose task was to work out how to calculate the value of finished goods. The case was about a small company that does not distinguish management accounting from financial accounting, and that is why the developed calculation of indirect costs was to be the basis for the comparison of profitability of the two groups of finished goods. The scenario also stressed that the results of the requested calculation would be used for inventory valuation and should be clearly described in the entity's changed accounting policy for the next year. The newly employed accountant should pay attention to the real picture of indirect costs, which constituted 50% of total production costs for each product. The change in the accounting policy was required as the calculations used in previous years were no longer valid because the entity had started production of product "2". The differences between product "1" and "2" were enormous and applied to the number of customer orders, the sum of direct working hours, and the area of the workshop used for production purposes, etc.

Because of the variety of financial and non-financial data required to describe the two production processes taking place in one workshop, the detailed data necessary to perform this task were presented to students as well as six different indirect cost calculations suggested as solutions to the described valuation problem. All proposed indirect cost allocations were correct in terms of full cost accounting and were in compliance with the applicable financial reporting law. The results of the six variants differed significantly in terms of the valuation of the finished goods. The range between the lowest and the highest value of finished good "1" amounted to 24%, while for product "2" – 15%. In addition to the six proposed calculations, the respondents were allowed to propose a seventh, based on their suggestions.

After being presented with the case, the respondents were asked to analyze it individually and choose the best method from the six propositions or to present their own calculation that best serves the purpose, e.g., the fair presentation of the indirect costs involved in two production processes that results in a reliable valuation of finished products "1" and "2". In the second step, the respondents had to justify their choice. After that, the students formed four-person groups in order to discuss the case and select one solution for the group. The participants who, as a consequence of the group discussion, changed the previous indirect cost allocation key, were then asked to indicate the arguments that were behind their decision. Neither the suggested justifications nor the overall area of expected arguments selected as explanations for the individual and group decisions was provided to the respondents.

The present study focuses on the reasons given by accountants when they were selecting one of seven different, but equivalent (in terms of accounting regulations) variants of an accounting problem: the allocation of indirect costs between two different finished goods. In particular, we were interested in the type of justifications that were used by the respondents to select a particular solution. Moreover, we analyzed the impact of the grounds given by the accountants on the stability of their decisions, referring to the selection of a given solution.

4. Results

As the first step of the analysis, we present the frequency of choosing a particular indirect cost allocation as a solution to the problem described in the scenario. According to the results, both choices – made individually and within the group – were varied. Detailed data are shown in Table 1[1].

Table 1. The frequency of indirect cost allocation solution

Basis for indirect cost allocation – suggested solutions	**Individual decision** (in %)	**Group decision** (in %)
(1) direct material	5.80	9.5
(2) direct salaries	8.40	2.9
(3) direct material plus direct salaries	34.70	33.3
(4) total direct cost	25.20	22.7
(5) number of man-hours	15.70	13.9
(6) area of the workshop used for the production of finished goods "1" and "2"	4.4	5.9
(7) own solution, e.g., developed by the student	5.5	10.3
(8) missing data	0.3	1.5

Source: own elaboration.

As can be observed in Table 1, solution (3) was chosen the most often, both individually and by the groups. Direct materials and direct wages represented the majority of the direct costs (98% in the case of product "1" and 71% in the case of "2"). The second most popular choice was variant (4), which indicated the importance of total direct costs. The respondents decided to use the allocation key based on the number of man-hours slightly less frequently. The remaining four solutions were chosen by ten percent or less of respondents.

With reference to the study design, the respondents were asked to explain their decisions by giving justifications. The arguments were then evaluated by an accounting professional with 20 years' expertise in financial accounting and divided into arguments

[1] The frequency relating to the decision made by the group was presented for each respondent (not for the group).

that were related to accounting or to other aspects of the business activities. The respondents were not informed about either the evaluation of their justifications nor about the assessment principles. In the group of substantive justifications, we included only from those arguments that referred to the indirect cost allocation basis and identified the concern for true and fair view in financial reporting as a consequence of the applied valuation techniques. Therefore, only 17.2% percent of justifications given by the respondents were classified as being based on merit, while 75.2% referred to other issues or contained incomplete merit justifications. The remaining 7.6% of respondents give no explanation of the choices made or the explanations were incomprehensible.

In the second step of the analysis, we divided the individual, non-substantive justifications according to three different aspects we had identified:

a) the management's approach to the new product (product "2") manifested by the need for quick financial information for the executive management; the need to "protect" the new finished product and lower its inventory value in order to eliminate the risk of production ceasing in a short period of time as a consequence of negative profitability,
b) the care for sales employees who promote the new product ("2") and those who sell the old product ("1") by influencing inventory valuation in a way that certain groups of salesmen are entitled (or not) to cash bonuses,
c) the desire to avoid fluctuations in inventory valuations by means of choosing an indirect cost allocation key that – in the opinion of the respondent – ensures quite a stable allocation of indirect costs per unit of finished product "1" and "2" during at least the accounting period of producing new finished goods.

The justifications given by some of the respondents were mixed, i.e., they contained justifications relating to at least two of the distinguished aspect of the problem. The last group consisted of merit-related but incomplete justifications. The frequency of the justification categories according to the individual decision-making is presented in Table 2.

Table 2. The frequency of justifications given by respondents who indicated non-substantive arguments

Categories of justifications	Percentage*
Management approach	26.50
Employees' interests	28.50
Avoid fluctuations	14.00
Mixed	20.00
Uncompleted	11.00

* The percentages presented in the table refer to the total number justifications that were comprehensible and not fully correct on the basis of merit (N = 200).

Source: own elaboration.

Slightly more than one-fourth of the respondents included in the analysis in Table 2 adopted the management (26.50%) or the employee approach (28.50%). In their justifications, they raised issues that showed how they had perceived the economic reality of the business activities, while financial reporting faithfulness was omitted. Among the justifications related to the sales employees, the respondents provided issues related to the calculated effectiveness of each group of products, as the cost of goods sold directly depends upon the value of the inventory. Further, a high (low) gross margin on a certain group of products results in the right (or not) to obtain a cash bonus, which is treated as a motivational tool. In the group of management approach justifications, the respondents focused on the most transparent presentation of production costs to the executives. The third most frequent way of justifying individual accounting choice referred to actions aimed at avoiding fluctuations (14.00%) and selection based on the highest value of the basis for the indirect cost allocation key. One in five respondents combined arguments from at least two of the categories. The common trait of all these justifications was that they pointed to the consequences of the chosen solution for the entity's sales employees, and the indirect influence the solution had on their motivation. One-third of respondents in this group combined this reason with substantive-related incentives, one third with the management point of view, and the last third with the fluctuation avoidance approach. The last category of justifications listed in Table 2 referred to merit, but the answers were incomplete.

Statistical analysis did not reveal any significant relationship between the variant cost allocation basis chosen by the respondents and the justifications given for their choice. This result was in line with our assumption and showed that the wide social and economic consequences of the accounting valuation decision were more important than blurring the faithfulness of the financial reporting. However, the type of arguments chosen by the respondents did not explain the selected variant of the solution. The freedom of choice of accounting method guaranteed by the legislator led to them making decisions not only on the basis of the content but also taking into account the point of view of the other stakeholders in the entity.

The second research question focused on the issue of the stability of the choice made during the discussion of this scenario in the four-person groups. According to the results, 44.50% changed the indirect cost allocation key after the group discussion while 48.90% kept the first choice. The remaining 6.60% had missing data. The direction of the changes can be observed in Table 1, where the frequency of the variants chosen individually and in groups is presented. Despite the changes, the most frequently chosen variants overlapped in both types of decision.

Similarly, as in the first part of the study, we focused on the justifications given by the respondents. In this analysis, justifications from only those participants who had changed their decision after the group discussion (N=128) were included. Analogically, the justifications were divided into substantive justifications and those related to other aspects of the entity's business activities. Justifications that referred to substantive arguments accounted for 18.00% of answers. In Table 3, we present the frequency of the remaining, non-substantive justifications.

Table 3. The frequency of justifications provided by respondents who changed the decision (and provided non-substantive individual justification)

Categories of justifications	Percentage*
Management approach	7.14
Employees interest	18.37
Avoid fluctuations in value	9.18
Mixed	5.10
Group pressure	46.94
Uncompleted	13.27

* The percentages presented in the table referred to the total number of justifications that were comprehensible and not fully correct on the basis of merit (N = 98).

Source: own elaboration.

Almost half of the participants (46.94%) changed their decision under the influence of the group, so they did not indicate any substantive reason for changing the variant of the indirect cost allocation key, but simply followed the majority. Among the justifications referring to the described situation, the most frequent (18.37%) was the argument that took into consideration the employees' perspective and which aimed at providing a solution that is fair to employees in the respondents' opinion. Less than ten percent of respondents focused on avoiding fluctuation (9.18%), concentrated on management issues (7.14%) or gave a justification that combined at least two of the above perspectives (5.10%). The remaining 13.27% of respondents produced accounting-related but incomplete justifications.

Regarding the second hypothesis formulated in this study, which assumes there is a relationship between general purpose financial reporting-related justifications and the stability of the choice of solution, we conducted regression analysis. The results showed that the type of justification (substantive or non-substantive) used by the respondents explained the stability of the decisions ($\beta = -0.12$; $p < 0.05$). The participants who justified their choice using sound, substantive arguments less often changed their decision during the group discussion.

The above result confirmed our assumption that stresses the importance of the accountant's sound theoretical knowledge and adequate professional experience in favoring the faithful representation of economic phenomena that are represented by words and numbers in financial reporting. A biased decision-making process might result in the selection or presentation of information that cannot be described as neutral, as described in the *Conceptual Framework*… (2018). Non-substantive reasoning during the decision-making process based on employee and management issues contaminates sound financial reporting arguments.

5. Concluding discussion

The analyzed case of indirect cost allocation decisions shows not only the complexity of representing economic phenomena in financial accounts, but it also suggests that faithfulness of financial reporting depends on the person who makes the decisions. On the one hand, it confirms the opinion presented in past research that accounting flexibility creates a huge space for accounting practitioners in the scope of achieving the goal of financial reporting. By examining the substantive and non-substantive justifications, we acknowledged the multifaceted decision-making process in reference to calculating the cost of finished goods, and in accounting choices in general. Full costing required by financial reporting assumes that inventory absorbs all direct and indirect costs, and it is well known that indirect costs constitute a major part of production costs nowadays. As a result, an error in allocation calculations will, of course, lead to other erroneous figures in the statement of financial position and statement of income. Finally, the affected balance sheet figures disclosed at the end of the period would be the beginning inventory for the following year.

Hypothesis 1 was proved, and we confirmed no interplay between the type of justification given by the respondents and the chosen indirect cost allocation key. According to the hypothesis, different (substantive and non-substantive) justifications end up with different solutions to the accounting problem. However, the analysis of the justification types showed the different perspectives taken by the respondents when making decisions. We observed that accountants cherry-picked some aspects of the scenario and made their decisions on fragmentary data and biased justifications while passing over substantive justification. The certain accounting outcome prevailed and the decision-making process ceased to adhere to the foundations of accounting. This finding is in line with the biases described by cognitive psychology and aimed at simplifying the analyzed problem. According to the nature of those biases, in this kind of reasoning, they may lead to decision-making errors. As the study addresses the role of substantive accounting choice justification, which is important from the point of view of preparing financial reports, an awareness of cognitive biases (that may be connected with non-substantive justifications) may be important.

We also contribute by showing the role of sound theoretical knowledge and adequate professional experience in giving a neutral depiction by eliminating biases in the selection and preparation of financial information. We confirmed hypothesis 2 by showing that the type of justification influences the stability of decisions. Our findings may suggest that non-substantive arguments given by respondents make it easier to succumb to social pressure in the case of biased decision. This finding is especially important in respect of the accountants, whose decisions should be based on objective facts in order to produce neutral information required by the defined goal of financial reporting – faithful representation (*Conceptual Framework…*, 2018).

We noticed a positive effect of the group discussion and an increase in substantive justifications. It suggests that when professional and sound justifications are used, it is easier to defend and support the allocation key chosen. As substantive justifications emphasize an adequate reflection of the economic phenomena of the entity, our finding is important from the point of view of an audit review or other internal or external inspections. To some extent, we showed that biases were what determined the measurement of finished goods and further influenced the financial reporting disclosure. Although the practitioners' intent is not an illegal element of preparing financial information, it requires an awareness of human cognitive inclinations that might lead to the unconscious deterioration of financial reporting.

Unlike the bulk of the accounting literature, which is preoccupied with decision-making judgments in the agency theory context, this article shows a unseen, but influential – in terms of quality of financial reporting – sphere of decision-making choices in a business setting with few legally acceptable possible solutions. In addition, we draw attention to the preparation of financial data that influence financial reporting, although we did not provide incentives that direct accountants to a particular solution. The results show that maintaining neutrality, required by *Conceptual Framework...* (2018), is difficult due to the above-mentioned characteristics of the cognitive processes related to decision making.

The limitations of the study are mainly due to just one country being investigated and the examination of only young practitioners. Perhaps seniority would change the justifications used by the accountants as they have greater experience in the accounting decision-making process. Moreover, the scenario presented in the study refers to just one area of financial accounts. In other words, the specificity of the analyzed situation could influence the justifications. In this light, it might be interesting to ask whether the range and role of justifications change with the modification of the area of financial accounts or the political and economical environment of the business's activities. Depending on the type of justifications formulated, the difference in the stability of the decisions observed in the study also opens the field to further exploration in this area. It would be worth focusing on factors that encourage accountants to use substantive accounting when making similar decisions or choices relating to accounting issues. In addition, when a conflict of interest appears, do substantive arguments help accountants when talking to superiors whose goals contradict general purpose financial reporting? How much and in what aspects is financial information contaminated when non-substantive justifications are used? Summarizing, the authors believe that the justifications of accountants is an area of research worthy of more systematic attention. It might support the expanding area of behavioral accounting theory by indicating psychological factors that may influence decisions as well as their stability.

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