International Business Management 11 (6): 1316-1327, 2017
ISSN: 1993-5250

Perspectives on Accounting Information Use: A Multiple Case Study

Maria do Ceu Gaspar Alves
Department of Accounting, NECE/UBI-Research Unit of Business Sciences,
University of Beira Interior (UBI), Estrada do Sineiro, Ed. Ernesto Cruz,
6200-209 Covilha, Portugal

Abstract: This study assess the use of accounting information in decision-making. Our main objective is to provide some insight into how and why managers use accounting information in decision-making. Using interviews with Portuguese managers and accountants of six highly successful firms, the study identifies situations in which manager's find accounting information useful to support new or rarely taken decision (strategic decision) and routine decision (operational decision). The findings also suggest two different perspectives on information use: the accountant's perspective and the manager perspective. Since, literature on the usage of accounting information for decision-making is sparse, our study helps to narrow this knowledge gap understanding manager's use of accounting information. Moreover, contrary to the literature on the topic, accounting information proves to be much more used by managers to identify problems than was previously thought.

Key words: Decision-making, accounting information, managerial work, marketing manager, production manager, accountants

INTRODUCTION

More than seven decades ago in his book the functions of the executive, Barnard (1938) placed decision-making at the heart of organizational theory and management studies. The work broke with the classical organization theory which includes the scientific management approach (Mintzberg and Waters, 1990). The following studies (Simon, 1976; Cyet and March, 1963), contributed to this change in organizational vision, bringing with them new concepts, new variables and above all a new view of organizational theory based on human behavior. Behavioral theory introduced a new approach to organizational theory which led to the adoption of a descriptive and explanatory posture to the detriment of normative and prescriptive positions of previous theories. Later studies by Mintzberg *et al.* (1976) made valuable contributions to studies on organizational decision-making by studying the way that decisions were made in organizations. An overview of the literature has shown that although the studies on the way that managers perform their tasks confirm the importance of information in a manager's day, the primary concern of these studies is not generally carried out in the context of decision-making.

Nevertheless, in practice most managers have not proven to be greatly concerned about this topic, perhaps because the data gathering and decision-making processes are such an integral part of their daily activities that they are not aware of the various steps which they perform, right or wrong. This does not mean, however that managers do not think the topic important, for many are fully aware of its importance and are prepared to expand their knowledge of the issue. In this context, some researchers (Munoz, 1994; Harrison, 1999) have described the decision-making process as the most important activity in business organizations.

The studies on the use of accounting information in management do not have a long tradition. The first of these studies was by Simon *et al.* (1954) in the 50's. This study represents the largest research work carried out to date on the use of accounting information in a business context. It analyzed the way accounting systems should be organized in companies to allow for a more productive use of the accounting information in decision-making. One of its greatest contributions was the definition of a typology of management decisions. More recently, Kinnon *et al.* (1992) investigated how production, sales and finance managers used accounting and other information in their work. Their study focused on the characteristics of the information used by managers which is also the context of the present study.

According to Pierce and O'Dea (2003), it has been recognized that producers and users of accounting information systems have fundamentally different motivation and attitudes that may lead to very different perceptions and previous studies have focused mainly on the perceptions of users. In their study, Pierce and O'Dea

(2003) found major differences between perceptions of managers and accountants. Following Pierce and O'Dea (2003) study, the purpose of this study is to provide better understanding of the relationship between decisions and accounting information use. Management decisions have consequences in all the functional areas and departments. This study is about operation and marketing managers and their usage of accounting information for decision-making. Despite calls to link management accounting to managerial work, much is still to be learned (Jonsson, 1998; Hall, 2010). Since, literature on the usage of accounting information for decision-making is sparse, our study helps to narrow this knowledge gap.

Literature review: Over the last 60 years, accounting scholars have investigated the various ways in which accounting information can come to influence managerial work and this literature has sensitized us for the fact that accounting information may serve a variety of different purposes in organizations (Gerdin *et al*., 2014; Miller and Power, 2013). However, the wider management and organization literature has paid only limited attention to the findings from this research (Gerdin *et al*., 2014).

In the decision-making literature, there are some consensual ideas on types of decisions and the structure of the process. For example, distinguishing between routine and complex decisions is common as is considering the decision process in its various steps: identifying the problem, looking for alternative solutions, evaluating the alternatives and choosing an alternative for the solution. There are also 4 basic approaches to decision-making: normative, descriptive, analytical and behavioral.

Much research has been focused on how managers use accounting information to make decisions in well-defined scenarios (Hall, 2010) and contexts such as offshoring of services (Brandau and Hoffjan, 2010), outsourcing (Nielsen *et al*., 2015) or in supporting servitisation (Laine *et al*., 2012). The development of different theories on decision proffered procedures for the resolution of structured problems (game theory, linear programming, critical path-pert, etc). Moigne points out that these contributions facilitate the decision-making process although they do not substitute the decision-maker. However, faced with a more complex situation such as a non-structured decision, these procedures revealed their limitations and were relegated to mere tools to support decisions. In these situations, personal characteristics and the decision-maker's experience take on particular relevance (Bentley, 1998). "Research on informational effects moves between two poles. On the one hand, it identifies ways in which heuristics succeed in producing judgments and decisions very similar to the outputs of optimizing models. On the other hand, this research identifies suboptimal (often biased) judgments and decisions that result from the cognitive limitations of individuals faced with the cognitive demands of management accounting tasks" (Birnberg *et al*., 2006). Accounting information may help managers to understand their tasks and reduce uncertainty before making their decisions (Chong, 1996). However, "when decision makers act on accounting they act on only a subset of things that could have been taken into account. Therefore, decisions produce new problems and in turn new decisions" (Mouritsen and Kreiner, 2016).

In general, existing studies on organizational decision-making have examined the way in which organizations make their decisions and the way that decisive behaviors affect the results of the decision (Huber and Daniels, 1986). In this sense, during the 50's and 60's, the carnegie school led research in this area with a series of studies based on the structural concept of "Organizations", the results of which are summarized in "The Behavioral Theory of the Firm" (Cyet and March, 1963). Only later were some studies based on the Process Model (Mintzberg *et al*., 1976) in order to find out more about the complexity of the decision-making process.

Then, in yet another attempt to enrich scientific knowledge on the topic, Allison (1969) described three organizational decision-making models the rational policy model, the organizational process model and the bureaucratic politics model and successfully used these models to explain the US cuban missile crisis during the kennedy administration.

The garbage can decision-making model also enhanced knowledge of the area by introducing in many contexts, the notion of randomness in organizational decision-making (Cohen *et al*., 1972). Other approaches were established in the analysis of the non-predictability of the process (Lindblom, 1959; Mintzberg *et al*., 1976; Anderson, 1983) as well as in the analysis of questions about power and the politics of the decision-making process (Pettigrew, 1972). Nevertheless, the rational model with its emphasis on quantitative theories is still the starting point for any study of decision-making (Harrison, 1999).

Research on organizational decision-making seems to have led to contradictory analytical referential frameworks from models that see decision-making as rational and sequential to models that describe the process as random and anarchical. A closer analysis of the situation shows that these models are in fact, complementary rather than contradictory. In the decision-process, it is usually assigned a central role to information. Decisions require information and the likelihood of making a good decision is enhanced by using, the information at hand (Clarke, 2002). The studies of how managers acquire and use information generally leads to two generalizations (Choo, 1993):

- Manager's needs for information are frequently related to the task and often stem from current and daily problems
- Managers prefer personal sources and often try to create a network of trustworthy sources, especially through means of verbal communication

A number of researchers have studied the selective use of information sources and media in the assorted steps of the decision-making process (Saunders and Jones, 1990) or even the role of the decision-maker (Leod *et al*., 1994). Saunders and Jones (1990) carried out a study based on the hypothesis that certain sources and media are more appropriate to certain steps of the decision-making process and that the decision-makers can manage the information flow during the decision-making process by controlling the selection of sources and media used to obtain information. The information may teach managers more about the possible alternatives and their consequences before they make their decision (Wouters and Verdaasdonk, 2002).

"Both the formal and informal accounting information systems are seen to be subsets of larger formal and informal organizational information systems" (Clancy and Collins, 1979). Simon *et al*. (1954) found the existence of informal information systems and introduced some assumptions about their origin and uses. Clancy and Collins (1979) found evidence that informal accounting systems existed and that the informal accounting system should be considered useful and necessary. There is a clear preference for informal and direct contact among individuals (Keegan, 1974; Brush, 1992; Kotter, 1982; 1999), especially when there is some uncertainty and ambiguity in the decision (Daft and Lengel, 1986; Gullberg, 2016). And emphasis is given to information documents (Bruns and Kinnon, 1993), especially in finance functional area (Keegan, 1974). However, it is not very clear in which situations decision-makers find accounting information particularly useful in helping to resolve the uncertainty about the consequences of their decisions (Wouters and Verdaasdonk, 2002).

The pursuit of information on past transactions is a reality that has existed for a long time. Nevertheless, the quest for management accounting information which is related to internal transfers within the organization is a much more recent phenomenon that resulted from the industrial revolution. The increasing size and complexity of companies in that period led to a more hierarchical organizational structure with greater need for accounting information (Johnson and Kaplan, 1987; Gago, 1999). The first measures of management accounting came about because of this new pursuit.

With the scientific management movement, linked to frederick taylor and henry fayol some additional steps were taken in the development of a management accounting system. In this sense, the scientific study of operations gave rise to the creation of cost standards for the consumption of direct costs, materials and labor (Fleischman and Parker, 1991). Indirect costs for their part were assigned to products through simple coefficients (although, it was imprecise, it was cheap and fast), generally based on the value or the direct hours of labor. Finally, efficiency was measured through the analysis of the difference between standard and real cost. Evolution and changes in management accounting over time can be represented in 4 different steps (IFA, 1998):

- Prior to 1950, the emphasis was on determining the costs and on financial control
- Around 1965, emphasis shifted to supplying information for planning and management control
- Around 1985, attention was directed toward reducing waste and a more efficient use of resources
- Around 1995, attention returned to the creation of value through efficient use of resources

Note that although, these four steps are easily identifiable, the transition from one to the other occurred in a developmental process; each step represents a need to adapt to new conditions all the while satisfying the needs of previous steps. The emphasis on supplying information that arose in the 2nd step then did not go away in the third. To the contrary, this information supply was readjusted to new needs such that in steps 3 and 4, information has come to be seen as an organizational resource and as such attempts are made to reduce losses or waste of this resource. The actual role of accounting changed throughout this process. In fact while in the 1st step, accounting was seen as a technical activity, necessary for carrying out organization objectives in the 2nd step it came to be seen as a management activity although in a supporting role and out of the line of command. In steps 3 and 4, accounting has come to be an integral part of the management process, seen as mindispensable in the process of organizational change (Ezzamel *et al*., 1994).

Thus, beginning in the 70's, there was a revolution in the treatment of information in a business context. In schools, accounting is treated as an information system and its objective, clearly identified in documents from professional organizations is to inform. In the 70's, greatest changes occurs in the accounting field with the rise of the “utility paradigm”. Document content is defined by user’s needs and the supply of information to support decision-making is transformed in the main function of accounting (Mintzberg and Waters, 1990).

Historically, accounting was developed with the basic objective of preparing periodic accounting reports and only after doing this work could any help be given in interpreting the information in these reports. That is why the development of a specific area of accounting for the preparation of special studies is a relatively recent phenomenon (Simon *et al*., 1954). This phenomenon arose rather slowly, given that there is much to gain in accounting, by separating the following functions: accounting record-keeping and regular reporting functions.

Assistance to the operating departments in their daily analyses of accounting information to respond to question to “evaluate the situation” and “detect problems”. Given the distinctions among accounting data for evaluating a situation “score card”, to “direct attention” and for “problem-solving”, there is valuable knowledge to be had on the best way to present reports and to carry out analyses to be used by operating personnel (Simon *et al*., 1954). Participation in the use of accounting information for “problem solving” based on special studies.

By separating the record-keeping functions from the analytical work, the risks of collision between the rigidity of the financial accounting standards and the greater flexibility needed to develop a special study are reduced. Furthermore, by separating the functions, they can be organized differently-more functionally and be placed in the most convenient place for example, near to the production department. In special studies, the areas in which accounting most actively participates are generally areas where the decision-making process is formalized where accounting is already formally defined (Simon *et al*., 1954).

In accounting organization, documents represent the key element in the support of decisions, since they carry more than data; they contain evaluations, interpretation and arguments (Allaire, 1989; Keegan, 1974) study documents represent the second most-used source of information, surpassed only by direct contacts. Studying the importance of the documents as a source of management information, Mendoza and Bescos (1998) found the following behaviors.

Managers easily resort to informal sources when they need to obtain information that is unavailable in the documents given to them. When the information is available in internal documents, the temptation to resort to other sources decreases.

Managers have specific expectations from the documents they expect. These should contribute to structuring, synthesizing and organizing the existing information. Managers have more difficulty dealing with problems related to the spread of information or even with the lack of coherence among the pieces of information that are sent to them. Sometimes, accounting reports actually provoke a decline in productivity (English, 1988) because it obliges managers to spend time trying to understand and justify the variations detected (Johnson and Kaplan, 1987).

Informal sources provide quicker access to information as well as faster knowledge about certain problems. In this type of situation, managers generally try to confirm or quantify the information obtained through their internal documents. This interest in documents used in the management process should be understood in the context of more global decisions. Thorough exploitation of documents often takes place in meetings. Managers under a constant flow of information expect that management documents will offer a pertinent selection of key information.

To sum up, managers have been found to be demanding about the documents made available to them; so that, they do not waste time, they try to eliminate redundant information. They also clearly distinguish the necessary and using the information they receive as efficiently as possible (Mendoza and Bescos, 1998). This way when information seems important to them, managers do not hesitate to look for it personally, structuring documents that give them general information about the company from those that are necessary for management decisions. Finally, managers are equally sensitive to the pertinence of the level of detail of the information provided to them. Therefore, far from submitting passively to the phenomena of information overload, managers tend to develop real strategies, constructing the information that they deem and reorganizing the information gathered by themselves or by others to build their own piloting tools.

Another, interesting finding of this study (Mendoza and Bescos, 1998), relates to the reading modalities of the documents. Managers read the documents selectively, rarely reading them in their entirety. They build reading charts to discover which indicators should be checked whenever data seems unusual.

A final point of this study should be noted-the importance of the manager’s experience. This experience is useful on two levels: it allows for a quicker and more efficient reading of the documents which in turn, allows the manager more quickly grasp what lies behind the numbers. For Barnard (1938), many accountants and executives can regularly pick up a somewhat complex balance sheet and in just a few minutes, draw the most significant facts from it. This skilled observation is a result of the skills acquired through long years of experience and the accumulation of technical knowledge.

For their part, Bruns and Kinnon (1993) believe that accounting reports are used more as a way to confirm the results of prior actions than as a source of day-to-day information they are used more in long-term than in the short-term decisions. These reports can be classified according to the type of information they supply: operating reports, status reports, benchmark or change reports and reference reports. In the 1950's Simon had already discovered that operating executives often need to resort to accounting reports to find out about facts that they cannot see in their normal day (Simon *et al*., 1954). In this sense although, it has been found that decision-making models do not indicate the most appropriate sources and media, there seem to be patterns for a correct selection of sources and media during the decision-making process (Saunders and Jones, 1990).

Finally, according to Pierce and O'Dea (2003), it has been recognized that designers/producers and users of accounting information systems have fundamentally different motivation and attitudes that may lead to very different perceptions and previous studies have focused mainly on the perceptions of users.

MATERIALS AND METHODS

Research study: This study consists in carrying out a set of semi-directive interviews in 6 large Portuguese manufacturing companies (Luoma, 1967). An interview is semi-directive or structured when the interviewers know all the topics about which they hope to elicit reaction although, the order in which they are presented is up to them (Ghiglioni and Mathalon, 1992). This type of interview is appropriate for exploring a specific area or for checking the development of an already known area. As in others accounting studies, 17 interviews were conducted (Kihn, 2011). The selection of cases was done so that in each company, at least two managers were interviewed, one from the producer perspective (Accounting and finance department) and another from the user perspective (production or sales/marketing departments). This allowed for comparing information gathered and thus, increased the strength of the results (Yin, 2009; Albarello *et al*., 1995). The 6 case studies were elaborated from these interviews.

This study did not aim to make comparisons among hierarchical levels; consequently, there is no stratification. Given the nature of the research however, it was essential that the researcher had access to those responsible for the functional areas studied whenever necessary, additional interviews were conducted. Several aspects, like experience, seniority in the company and availability for interview were considered in the selection of the sample.

The interviews which lasted an average of two hours each, explored questions about the use of accounting information in the various steps of the decision-making process. In an attempt to reinforce the reliability of the results (Yin, 2009) and to facilitate the reduction of data (Albarello *et al*., 1995), two different interview scripts were built, one for the financial division (producer of accounting information) and another for the Sales/marketing and production managers (users of accounting information). Each script contains a set of structured questions in which some points were deliberately left open-ended to expand the conversation. The use of accounting information in the assorted steps of the decision-making process was studied through these questions (Saunders and Jones, 1990).

The interviews were carried out separately to allow each of the respondents to speak openly. Whenever possible, they took place on the job to allow the research to gather additional elements like documents, to confirm the information gathered. Sometimes, the noise from the production plant made recording in the workplace difficult in these situations, the interview took place in the company's meeting room. A small pilot study was also conducted to validate the research design and a few changes regarding the research questions and interview protocol were made based on the pilot study results and feedbacks. Much like in other studies (Simon *et al*., 1954), during the interviews the focus was on finding out how the accounting worked rather than on knowing whether the respondents were good or bad professional.

Before the interview, the objectives were stressed and authorization was requested to record the interview. All the interviews were recorded so that since some of the questions were open-ended and the interviewee could thus respond in a non-structured way, the information gathered would be more plentiful.

After the interview, data triangulation was done (Albarello *et al*., 1995). Triangulation strengthens a study by combining methods (Patton, 2002) in this specific case, testimony was contrasted with documents and a report was written which was sent by e-mail to the interviewee to allow him or her to alter and/or complement the content and clear up any doubts. After their confirmation or correction, the 6 case studies were drawn up. This procedure enriched the research and increased the reliability of the information gathered. In the case studies, for confidentiality purposes, the names and details were changed or omitted to protect the identity of the participants and their companies. Some of the managers interviewed requested that their identity not be disclosed, since they had not requested permission to give the interview. For this and in the interest of uniformity, all identities were hidden.

To analyze the use of accounting information in the decision-making process, we ask managers to answers the following questions: what are the steps of the managerial decision process of a manager? Is accounting information used in the same way in each step?

First though, the theoretical framework involved the definition of a decision-making model. The model, initially defined by Simon (1960) as the intelligence-conception choice model and later developed by Mintzberg *et al.* (1976) as the process model was used is this study. This model was chosen because it represents an appropriate tool for studying decisions in real contexts (Browne, 1993). As in Heller *et al.* (1988), 4 steps were considered thus adding astep for implementing the decision to Mintzberg's initial model: identifying the problem, developing alternatives, selecting and implementing the decision. The theoretical framework also required the prior definition of the decisions to be analyzed. As in Mintzberg's study (Mintzberg *et al.*, 1976), two types of decisions were considered: strategic and routine decisions.

The methodology followed throughout the interview was similar to the critical incident technique (Flanagan, 1954), since the interviewee was asked to remember first, the 3 most important decisions made in the prior 6 months and then the latest three routine decisions made. In each of the situations, a description was requested: the process of identifying the problem; the information search process; information sources used (accounting information or not); how the information was gathered; and finally; how accounting information influences the decision. A small database of the decisions analyzed was created. The interview text was explored through a horizontal content analysis that was carried out for each case study as well as through a vertically content analysis for all the studies (Ghiglione and Matalon, 1992).

RESULTS AND DISCUSSION

In order to study the use of accounting information in each step of the decision-making process in the context of strategic decisions, here the word strategic means simply an important decision (Mintzberg *et al.*, 1976), the interviewees were asked to identify the 3 most important decisions made in the last 6 months and the steps of the decision-making process.

In each case study, the number of interviews conducted can vary as it sought to interview all the available responsible of the accounting, production and marketing areas. In each firm, we were confronted with different situations. Although, we asked respondents to remember three decisions, some of them mentioned 4 decisions and others just two. The decision process used in this study is composed by 4 steps: step 1 = identifying the problem, step 2 = listing alternatives, step 3 = selecting an alternative and step 4 = implementation of the decision. And, the accounting information used by managers could be provided: AR- Available Regularly and RP-Requested Purposefully. For measuring the impact of accounting information on the decision a 5 items scale was used: 1-very bad; 2-bad; 3-irrelevant; 4-important and 5-decisive.

Accounting information was found to be used in most (68%) of the interviewee's decisions and was used with greater intensity in the first three steps of the decision-making process: identifying the problem, listing the alternatives and selecting an alternative. The information used in strategic decisions is primarily requested on purpose and its impact in the decision is decisive (12/18) or at least important (6/18) (Table 1).

The information used in routine decisions is either requested on purpose or furnished regularly. These aspects "reflect a view of timely accounting information as arriving either with a certain frequency or simply as soon as possible-either upon request or automatically for manager's decision making and control" (Gullberg, 2016). Its impact is decisive in most (14/20) of the decisions referred important in five cases and insignificant in just one case (Table 2).

The literature review showed that some studies point out a greater need for accounting information in certain steps of the decision-making process (Mintzberg *et al.*, 1976). It is even considered that when looking for information on the consequences of each alternative (Maher *et al.*, 1978), management accounting plays a decisive role because it allows the manager to contemplate various options (Murphy *et al.*, 1995; Brandon and Drtina, 1997). Other researchers have a different opinion, considering that accounting information is used throughout the whole process (Munoz, 1994).

The results obtained suggest that although, accounting information is used throughout the entire

Table 1: Accounting information use in strategic decisions

	Decision process/Strategic decisions					
Decisions	Step 1	Step 2	Step 3	Step 4	Source	Impact on decision
Case study-No. 1						
Decision 1	X	-	-	-	AR	5
Decision 2	-	X	X	-	AR	5
Decision 3	X	-	-	-	AR	5
Case study-No. 1						
Decision 1	X	-	-	-	RP	5
Decision 2	X	-	-	-	-	-
Decision 3	-	-	-	-	-	-
Case study-No. 1						
Decision 1	X	-	-	-	AR	4
Decision 2	-	-	X	-	AR	4
Decision 3	-	X	X	-	AR	5
Decision 4	X	X	X	-	RP	5
Case study-No. 2						
Decision 1	-	X	X	-	AR	4
Decision 2	-	-	-	-	-	-
Decision 3	-	-	-	-	-	-
Case study-No. 3						
Decision 1	-	X	X	-	RP	4
Decision 2	-	-	-	-	-	-
Case study-No. 3						
Decision 1	-	X	X	-	RP	5
Decision 2	-	-	-	-	-	-
Decision 3	-	-	-	-	-	-
Decision 4	X	X	-	-	RP	5
Case study-No. 4						
Decision 1	X	-	X	X	RP	5
Decision 2	-	-	-	-	-	-
Decision 3	X	X	X	X	RP	4
Case study-No. 5						
Decision 1	-	X	X	-	RP	5
Decision 2	-	-	-	-	-	-
Decision 3	X	X	X	X	RP	5
Case study-No. 6						
Decision 1	X	-	-	X	AR	4
Decision 2	X	X	X	-	RP	5
Decision 3	-	-	-	-	-	-
Accounting information use (19/28 decisions)	12	11	12	4	AR = 8 RP = 10	Important = 6 decisions Decisive = 12 decisions
Percentage	63	58	63	21	-	-

process, it is highly utilized for identifying the problem. This result contradicts some of the commonly cited literature on the topic (Maher *et al*., 1978; Murphy *et al*., 1995; Brandon and Drtina, 1997). The results obtained also suggest that accounting information is rarely used in the implementation step (Table 1 and 2).

Nevertheless, the opinion of the financial managers (Table 3) fit perfectly with the literature (Maher *et al*., 1978). Thus, in their opinion accounting information asked by the sales/marketing and production managers although, utilized in all the steps of the decision-making process had a more significant impact to list analyze and choose alternatives (steps 2 and 3). Two different perspectives thus become evident: the perspective of the managers as information user (Table 1 and 2) and the perspective of the accountants as information producer (Table 3).

In this study, accounting information was found to be used in most of the decisions made by sales/marketing and production managers and is used with more intensity in the first 3 steps of the decision-making process-identifying the problem, listing the alternatives and analyzing and choosing an alternative. So, contrary to what has been written in the literature, the results obtained suggest that accounting information is highly utilized to identify problems although, it is little used in the implementation of the decision (Table 1 and 2).

Table 2: Accounting information use in routine decisions

Decisions	Decision process/strategic decisions Step 1	Step 2	Step 3	Step 4	Source	Impact on decision
Case study-No. 1						
Decision 1	-	X	X	-	AR	5
Decision 2	-	X	X	-	AR	5
Decision 3	-	X	X	-	AR	5
Case study-No. 1						
Decision 1	-	X	X	-	AR	4
Decision 2	-	-	-	-	-	-
Decision 3	X	-	-	-	AR	4
Case study-No. 1						
Decision 1	X	-	-	-	AR	5
Decision 2	-	X	-	-	AR+RP	4
Decision 3	X	-	-	-	RP	5
Case study-No. 2						
Decision 1	-	-	-	-	-	-
Decision 2	-	-	-	-	-	-
Decision 3	X	X	X	-	AR	5
Case study-No. 3						
Decision 1	-	X	X	-	RP	5
Decision 2	X	-	-	X	RP	5
Decision 3	-	-	-	-	-	-
Case study-No. 3						
Decision 1	-	-	-	-	-	-
Decision 2	-	-	-	-	-	-
Decision 3	X	-	-	-	AR	5
Case study-No. 4						
Decision 1	X	X	-	-	AR	5
Decision 2	X	-	-	-	AR	3
Decision 3	X	X	X	X	AR	4
Case study-No. 5						
Decision 1	-	X	X	-	RP	5
Decision 2	-	-	-	-	-	-
Decision 3	-	X	X	-	AR	5
Case study-No. 6						
Decision 1	X	-	-	X	AR	4
Decision 2	X	-	-	-	RP	5
Decision 3	X	-	-	-	RP	5
Accounting information use (20/27 decisions)	12	11	9	3	AR = 11 RP = 10 Decisive = 14 decisions Irrelevant = 1 decisions	Important = 5 decisions
Percentage	60	55	45	15	-	-

Table 3: Accounting information requests (accountant perspective)

Requests	Decision process Step 1	Step 2	Step 3	Step 4
Production managers				
Case study-No. 1				
Outsourcing	-	-	X	-
Case study-No. 1				
Feasibility study	-	X	X	-
Case study-No. 2				
Attempting to reduce costs in the area of car components	-	X	X	-
Monitoring the profitability of an investment in production	-	X	X	-
Mounting or not "booths" for export	-	X	X	-
Case study-No. 3				
Sensitivity analysis on the impact of manpower cost on results	X	X	-	-
Outsourcing	-	-	X	-
Case study-No. 5				
Outsourcing	-	X	X	X
Purchase machine	-	X	X	-
(9 decisions) (%)	1/11	7/78	8/89	1/11

Table 3: Continue

Requests	Decision process Step 1	Step 2	Step 3	Step 4
Marketing managers				
Case study-No. 1				
Sales price definition	-	-	X	-
Setting the price of a repair	-	X	X	-
Case study-No. 1				
Feasibility study	-	X	X	-
Case study-No. 2				
Determination of the breakeven point of sales by market	-	X	X	-
Profitability analysis after each standard change	-	X	X	-
Creation of a web page on the internal network of the group	X	-	X	-
Case study-No. 3				
Changing prices on a range of articles	-	X	X	X
Case study-No. 4				
Change in the distribution process	X	X	X	X
Diagnostics company	X	-	X	X
Change of strategy	X	-	X	X
Case study-No. 5				
Change in selling price	X	-	X	X
Case study-No. 6				
Change in selling price	X	X	X	X
12 decisions (%)	6/50	7/58	12/100	6/50

Nevertheless, the opinion of finance managers and accountants is different and fits perfectly with the commonly cited results of other studies (Maher *et al*., 1978; Murphy *et al*., 1995; Brandon and Drtina, 1997). In these studies, accounting information requested by sales/marketing and production managers, despite being used in all the steps of the decision process has a greater impact in the first three steps: listing, analyzing and choosing alternatives (Table 2 and 3).

The cases analyzed demonstrate a use of accounting information that differs in the assorted steps of the decision-making process. The perception of the finance, marketing and production managers in the same organizations, regarding information supplied by the accounting function were compared and the differences highlighted.

CONCLUSION

The empirical results of the present study enhance our understanding of manager's uses of accounting information. The results suggest that the decision-making process in large Portuguese companies is structured. That is why four distinct steps were identified in all the decisions presented by respondents.

In the same way, two different perspectives were identified in the use of accounting information in decision-making. The results of this study suggest that accounting information was not used in the same way during the decision process. In the information user perspective (manager), the accounting information is most used to identify the problem, list and analyze the alternatives whereas in the perspective of the information producer (accountant), accounting information has greater impact in the steps of listing and analyzing the alternatives.

Managers are unanimous in considering that accounting information does not have a significant impact on the step of implementing the decision. Therefore, accounting information does not have the same importance in all of the steps of the decision-making process.

The results suggest that accounting information was used in most of the decisions presented by managers in sales/marketing and production with greater intensity in the first three steps of the decision-making process-identifying the problem, listing the alternatives and analyzing and choosing an alternative. Thus, contrary to the literature on the topic, accounting information proved to be much utilized in the identification of the problem step.

However, finance managers have a different perspective; accounting information that is requested by sales/marketing and production while used in all the steps of the decision-making process have a greater impact in the steps of listing and analyzing the alternatives, this perspective is corroborated by the literature review on the topic.

"In an environment of increasing disconnection between researchers and practitioners this is important if accounting research is to influence more strongly the practice of accounting itself" (Hall, 2010). In particular, researcher can make refinements to existing knowledge, based on a more nuanced and pertinent understanding of how managers use accounting information in their work. Our contribution lies in identifying two distinct perspectives regarding the use of accounting information in decision-making. The "financial" and "non-financial" or the "user" and the "producer", perspectives of accounting information use. These perspectives portray a distinct use of accounting information. The approach identified in the literature corresponds to the financial perspective.

The study also increased our understanding on information systems in manager's work and thus adds to the literature on the link between management accounting and information systems (Rom and Rohde, 2007) which has mainly focused on the work of controllers (Rodriguez and Spraakman, 2012).

REFERENCES

Albarello, L., F. Digneffe, J.P. Hiernaux, C. Maroy and D. Ruquoy *et al.*, 1995. Practices and methods of research in the social sciences. Paul Sabatier University, Toulouse, France. http://ed.humanites.unistra.fr/uploads/media/listeouvrmethodosept2012.pdf.

Allaire, P., 1989. Electronic information in the executive office. Executive Excellence, 6: 5-6.

Allison, G.T., 1969. Conceptual models and the Cuban missile crisis. Am. Political Sci. Rev., 63: 689-718.

Anderson, P.A., 1983. Decision making by objection and the Cuban missile crisis. Administrative Sci. Q., 28: 201-222.

Barnard, C.L., 1938. The Functions of the Executive. Harvard University Press, Cambridge, MA., USA., ISBN-13: 9780674328037, Pages: 334.

Bentley, T.J., 1998. Managing Information-Avoiding Overload: Business Skills Series. Chartered Institute of Management Accountants, London, UK., ISBN:9780749426828, Pages: 161.

Birnberg, J.G., J. Luft and M.D. Shields, 2006. Psychology Theory in Management Accounting Research. In: Handbooks of Management Accounting Research, Hopwood, C. and Shields (Eds.). Elservier, Oxford, UK., pp: 113-135.

Brandau, M. and A.H. Hoffjan, 2010. Exploring the involvement of management accounting in strategic decisions and control: The case of offshoring. J. Accounting Organizational Change, 6: 72-95.

Brandon, C.H. and R.E. Drtina, 1997. Management Accounting: Strategy and Control. McGraw-Hill, New York, USA., ISBN:9780070178533, Pages: 906.

Browne, M., 1993. Organizational Decision-Making and Information. University of Michigan, Arbor, Michigan, ISBN:9780893918705, Pages: 256.

Bruns, J.W.J. and M.S.M. Kinnon, 1993. Information and managers: A field study. J. Manage. Accounting Res., 5: 84-108.

Brush, C.G., 1992. Marketplace information scanning activities of new manufacturing ventures. J. Small Bus. Manage., 30: 41-53.

Chong, V.K., 1996. Management accounting systems, task uncertainty and managerial performance: A research note. Acc. Organiz. Soc., 21: 415-421.

Choo, C.W., 1993. Environmental scanning: Acquisition and uses of information by chief executive officers in the Canadian telecommunications industry. Ph.D Thesis, University of Toronto, Toronto, Ontario.

Clancy, D.K. and F. Collins, 1979. Informal accounting information systems: Some tentative findings. Accounting Organizations Soc., 4: 21-30.

Clarke, P.J., 2002. Accounting Information for Managers. 2nd Edn., Oak tree Press, Dublin, Republic of Ireland, ISBN:1-86076-248-4, Pages: 471.

Cohen, M.D., J.G. March and J.P. Olsen, 1972. A garbage can model of organizational choice. Admin. Sci. Q., 17: 1-25.

Cyet, R.M. and J.G. March, 1963. A Behavioral Theory of the Firm. 7th Edn., Prentice-Hall, Englewoos Cliffs, New Jersey, Pages: 332.

Daft, R.L. and R.H. Lengel, 1986. Organizational information requirements, media richness and structural design. Manage. Sci., 32: 554-557.

English, L., 1988. Management accounting: Time for change. Aust. Accountant, 58: 75-81.

Ezzamel, M., S. Lilley and H. Willmott, 1994. A survey of management practices. Manage. Accounting, 72: 10-12.

Flanagan, J.C., 1954. The critical incident technique. Psychol. Bull., 51: 327-358.

Fleischman, R.K. and L.D. Parker, 1991. British entrepreneurs and pre-industrial revolution evidence of cost management. Accounting Rev., 66: 361-375.

Gago, S., 1999. [Study on the evolution of the accounting of management under the foundations of the social sciences (In Spanish)]. Accounting Trade Mag., 224: 789-814.

Gerdin, J., M. Messner and J. Mouritsen, 2014. On the significance of accounting for managerial work. Scand. J. Manage., 4: 389-394.

Ghiglione, R. and B. Matalon, 1992. The Inquiry-Theory and Practice. Celta Editora Lda, Lisbon, Portugal, ISBN:9789727741205, Pages: 370 (In Portuguese).

Gullberg, C., 2016. What makes accounting information timely?. Qual. Res. Accounting Manage., 13: 189-215.

Hall, M., 2010. Accounting information and managerial work. Accounting Org., Soc., 35: 301-315.

Harrison, E.F., 1999. The Managerial Decision-Making Process. 5th Edn., Houghton Mifflin, New York, USA.,.

Heller, F., P. Drenth, P. Koopman and V. Rus, 1988. Decisions in Organizations: A Three Comparative Study. Sage, London, England, ISBN:9780803980549, Pages: 250.

Huber, G.P. and M.R.R. Daniel, 1986. The decision-making paradigm of organizational design. Manage. Sci., 32: 572-589.

IFA., 1998. International management accounting practice statement: Management accounting concepts. International Federation of Accountants, New York, USA.

Johnson, H.T. and R.S. Kaplan, 1987. The rise and fall of management accounting. Manage. Accounting, 68: 22-30.

Jonsson, S., 1998. Relate management accounting research to managerial work!. Accounting Organizations Soc., 23: 411-434.

Keegan, W.J., 1974. Multinational scanning: A study of the information sources utilized by headquarters executives in multinational companies. Administrative Sci. Q., 19: 411-421.

Kihn, L.A., 2011. How do controllers and managers interpret budget targets?. J. Accounting Organizational Change, 7: 212-236.

Kinnon, M.S.M. and J.W.J. Bruns, 1992. The Information Mosaic: How Managers Get the Information they Really Need. Harvard Business School Press, Boston, Massachusetts, ISBN:0875843174,.

Kotter J.P., 1999. What effective general managers really do. Harv. Bus. Rev., 77: 145-159.

Kotter, J.P., 1982. The General Managers. The Free Press, New York, USA.,.

Laine, T., J. Paranko and P. Suomala, 2012. Management accounting roles in supporting servitisation: Implications for decision making at multiple levels. Managing Serv. Qual. Intl. J., 22: 212-232.

Leod, M.R., J.W. Jones and J.L. Poitevent, 1994. How Can Executives Improve their Decision Support Systems. In: Decision Support and Executive Information Systems, Gray, P. (Ed.). Prentice Hall, Upper Saddle River, New Jersey, pp: 123-133.

Lindblom, C.E., 1959. The science of muddling through. Public Administration Rev., 19: 79-88.

Luoma, G.A., 1967. Accounting information in managerial decision-making for small and medium manufacturers. National Association of Accountants, New York, USA.

Maher, M., C. Stickney, R. Weil and S. Davidson, 1978. Managerial Accounting an Introduction to Concepts, Methods and Uses. 4th Edn., Harcourt, San Diego, California,.

Mendoza, C. and P.L. Bescos, 1998. [Decision-making and performance management: What documents are used by managers? (In Spanish)]. Congress French Assoc. Accounting Perform. Accounting, 14 : 15-16.

Miller, P. and M. Power, 2013. Accounting, organizing and economizing: Connecting accounting research and organization theory. Acad. Manage. Ann., 7: 557-605.

Mintzberg, H. and J. Waters, 1990. Studying deciding: An exchange of views between Mintzberg and waters, pettigrew and butler. Organ. Stud., 11: 1-6.

Mintzberg, H., D. Raisinghani and A. Theoret, 1976. The structure of unstructured decision processes. Admin. Sci. Q., 21: 246-275.

Mouritsen, J. and K. Kreiner, 2016. Accounting, decisions and promises. Accounting Organizations Soc., 49: 21-31.

Munoz, M., 1994. [Strategic management accounting: Strategic assumptions]. Ph.D Thesis, University of Extremadura, Badajoz, Spain. (In Spanish)

Murphy, C., J. Currie and M. Fahy, 1995. The role of the management accountant in implementing decision support systems: Some empirical evidence. Irish Accounting Rev., 2: 133-155.

Nielsen, L.B., F. Mitchell and H. Norreklit, 2015. Management accounting and decision making: Two case studies of outsourcing. Accounting Forum, 39: 64-82.

Patton, M.Q., 2002. Qualitative Research and Evaluation Methods. 3rd Edn., Sage Publication, California, ISBN: 0-7619-1971-6, Pages: 598.

Pettigrew, A.M., 1972. Information control as a power resource. Sociology, 6: 187-204.

Pierce, B. and T. O'Dea, 2003. Management accounting information and the needs of managers: Perceptions of managers and accountants compared. Br. Accounting Rev., 35: 257-290.

Rodriguez, S.C. and G. Spraakman, 2012. ERP systems and management accounting: A multiple case study. Qual. Res. Accounting Manage., 9: 398-414.

Rom, A. and C. Rohde, 2007. Management accounting and integrated information systems: A literature review. Intl. J. Accounting Inf. Syst., 8: 40-68.

Saunders, C. and J.W. Jones, 1990. Temporal sequences in information acquisition for decision making: A focus on source and medium. Acad. Manage. Rev., 15: 29-46.

Simon, H., 1976. Administrative Behaviour. 2nd Edn., The Free Press, Collier Macmillan Ltd., Canada, pp: 61-73.

Simon, H.A., 1960. The New Science of Management Decision. Harper and Row, New York, USA.,.

Simon, H.A., H. Guetzkow, G.E. Kozmetsky and G. Tyndall, 1954. Centralization Vs decentralization in organizing the controllers department. Controllership Foundation, New York, USA.

Wouters, M. and P. Verdaasdonk, 2002. Supporting management decisions with ex ante accounting information. Eur. Manage. J., 20: 82-94.

Yin, R.K., 2009. Case Study Research: Design and Methods. 4th Edn., Sage Publications, Thousand Oaks, CA., USA., ISBN-13: 9781412960991, Pages: 219.