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ORIGINAL PAPER

Ethical Implications of Management Accounting and Control: A Systematic Review of the Contributions from the *Journal of Business Ethics*

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Abstract
Management accounting and control seeks to provide information that substantiates decision-making at all firm levels and thus may also foster ethical decision-making. Against this background, this article presents a systematic literature review of research on management accounting and control and business ethics that has been published in the *Journal of Business Ethics*. Through this review, we intend to bring to the forefront a research topic that has been widely neglected in broader literature reviews on accounting ethics research and that has been covered by a small number of articles published by traditional leading accounting journals only. Our systematic literature review is guided by a theoretical framework that integrates the decision-facilitating and decision-influencing roles of management accounting and control information and the stages of the ethical decision-making process. Through this theoretical lens, we analyze 64 management accounting and control articles published in the *Journal of Business Ethics* over more than three decades. Synthesizing and structuring this research, we discuss prior accomplishments and elaborate on avenues for future research.

Keywords Budgeting · Controller · Ethics · *Journal of Business Ethics* · Management accountant · Management accounting · Management control system · Performance measurement system

Introduction

Various high-level accounting scandals in the last two decades (e.g., Enron, Parmalat and WorldCom) have emphasized the importance of ethical behavior in accounting. Accordingly, a considerable body of literature has emerged in the field of accounting ethics (e.g., Bampton and Cowton 2013; Uysal 2010). However, this strand of the literature focuses widely on financial reporting fraud and the work and education of auditors (Reck 2000; Bampton and Cowton 2013; Clor-Proell et al. 2015). By contrast, management accounting and control (MAC), which is concerned with the provision of information for managerial decision-making within companies and the alignment of employee behavior with company interests (e.g., Sprinkle 2003; van Veen-Dirks 2010), has been characterized as "not to be well represented" (Bampton and Cowton 2013, p. 557) in accounting ethics scholarship.[1]

This relative lack of studies may be connected to the subtler nature of ethical issues in MAC compared with the obviously unethical practices of misreporting financial accounting numbers and misleading investors and the general public (Cugueró-Escofet and Rosanas 2017). The scarcity of articles may also be related to the lack of publicly available data (Zimmerman 2001). Nevertheless, this scarcity is surprising because management accountants regularly interact with top management and have a significant influence on managerial

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[1] Accounting can be divided into the major sub-disciplines of financial accounting, management accounting, auditing, and taxation (Endenich and Trapp 2018). Note that in this review, we considered articles that cover MAC issues in the audit sector (i.e., those management accounting articles with a specific industry focus on the audit sector) but excluded all other audit-related articles.

decisions (e.g., Goretzki et al 2013; Lambert and Sponem 2012). Given that MAC seeks to provide information that substantiates decision-making at all firm levels, we would expect that MAC can contribute to (un-)ethical behavior. Moreover, management accountants are process owners of several key corporate processes, such as budgeting and management reporting, and run the corporate cost accounting and management control systems (MCSs) (e.g., Chang et al. 2014; Maas and Matějka 2009). Accordingly, the violation of ethical standards by management accountants and the practices they shape can have far-reaching consequences for their companies and for society overall. Therefore, we suggest that management accountants can also play an important role in enforcing company policies and are "entrusted with special fiduciary responsibility when it comes to business ethics" (Lindsay et al. 1996, p. 395; Schlank 1985).

Against this background, our goal is to structure and summarize existing research on MAC and business ethics published in the *Journal of Business Ethics (JBE)*. Identifying the major topics, methods, and theories of this stream of research is important given the outlined role of MAC in business practice. Based on the synthesis and discussion of the extant body of literature, we critically reflect on the state of the art and discuss avenues for future research. Through this approach, we complement the analysis of accounting ethics scholarship by Bampton and Cowton (2013), which focuses on publications in the context of financial accounting and the auditing profession. Our review refers to publications in the *JBE* as the leading journal in the field of business ethics. Given that the *JBE* "plays an important role in setting the research agenda for the entire field" (Calabretta et al. 2011, p. 499), it seems obvious to focus on its publications to capture the state of the art of this research stream.[2]

We consider our review of interest to MAC and business ethics scholars who intend to broaden their perspective. An increased knowledge of the theoretical foundations and empirical findings of both MAC and business ethics research may be considered a prerequisite for future cross-disciplinary collaborations between ethics and MAC scholars. In this context, our paper contributes to the identification of current research gaps and highlights avenues for future research because we refer to recent developments in the broader field of MAC research. Given the importance of MAC and business ethics for corporate practice, we also consider our review relevant for, among others, chief executive, financial and information officers, business controllers, and internal and external auditors.

The remainder of this article is organized as follows. First, we develop the theoretical framework that guides our analysis and that is based on the distinction between the decision-facilitating and decision-influencing roles of MAC information and the stages of the ethical decision-making process according to the work of Rest (1986). Next, we explain our research method and structure and discuss the papers on MAC and business ethics published in the *JBE*. We close with a critical evaluation of the literature stream and implications for practice and academia.

Theoretical Framework

MAC refers to the process of "planning, designing, measuring, and operating nonfinancial and financial information systems that guides management action, motivates behavior, and supports and creates the cultural values necessary to achieve an organization's strategic, tactical and operative objectives" (Foster and Young 1997, p. 64). MAC information is supposed to improve employees' knowledge and enable them to make "organizationally desirable judgments and better-informed action choices" (Sprinkle 2003, p. 302). Therefore, this decision-facilitating role of MAC information is concerned with providing information to reduce ex-ante (i.e., pre-decision) uncertainty by allowing corporate members a superior evaluation of past performance and a better prediction of future developments (Tiessen and Waterhouse 1983). In addition, MAC is intended to reinforce the alignment of decisions made by the employees

[2] This approach can be further rationalized by Bampton and Cowton (2013) who identified fewer than five accounting ethics articles published in *The Accounting Review*, which is widely perceived to be a leading scholarly accounting journal (e.g., Bonner et al. 2006), over the two decades that their analysis covered. Against this background, we used EBSCO Business Source Complete to analyze whether significantly more articles on MAC and business ethics have been published in recent years. Our search referred to the three leading mainstream accounting journals (in alphabetical order: *Journal of Accounting and Economics, Journal of Accounting Research*, and *The Accounting Review*) as well as to the three leading journals that primarily publish interpretative and critical research (*Accounting, Auditing & Accountability Journal; Accounting, Organizations and Society*; and *Critical Perspectives on Accounting*) between 2013 and 2018. We identified three articles related to MAC and business ethics in these journals during this period. These articles refer to topics that are covered by the papers published in the *JBE* and discussed in this review. Against this background and given our objective of identifying the major topics, methods, and theories in research on MAC and business ethics, it seems reasonable to focus our review on publications from the *JBE*. Because ethical considerations may play a role in accounting education, we also searched in *Issues in Accounting Education* and the *Journal of Accounting Education* for potentially

Footnote 2 (continued)

relevant papers but only identified teaching cases that include questions related to ethical decision-making in a management accounting context. However, in light of our focus on *research* related to MAC and business ethics, these papers are beyond the scope of our review. Moreover, by focusing on publications from the *JBE*, we intend to ensure comparability between the articles analyzed and a focused and condensed analysis. Future research may complement our analysis by focusing on a broader set of journals.

with organizational objectives (Sprinkle 2003). According to this decision-influencing role, MAC information is used to incentivize employees to make decisions that are in the organization's best interest and that do not serve their own self-interest (Van Veen-Dirks 2010).

While MAC traditionally focuses on decision-making to improve the financial performance of an organization, recent years have seen a significantly increasing spectrum of performance dimensions relevant to MAC (Arjaliès and Mundy 2013; Gond et al. 2012; Lisi 2015). This development is partially driven by the awareness that non-financial performance, such as product quality and customer satisfaction, can lead to improved financial results (Banker et al. 2000; Chen et al. 2014; Ittner and Larcker 1998). It is also reinforced by broader societal developments implying that organizations are not only responsible to shareholders but also to a broader group of stakeholders comprising, e.g., employees, customers, suppliers, and society overall (Barnea and Rubin 2010; Campbell 2007; McWilliams and Siegel 2001). Accordingly, we argue that contemporary organizations use MAC information to substantiate economic decision-making but also to foster—explicitly or implicitly—ethical decision-making.[3] For example, measuring and communicating the social performance of an organization may increase managers' propensity to consider the interests of multiple stakeholders (e.g., suppliers and customers) in their decision-making instead of exclusively focusing on the financial consequences of their decisions. Setting achievable targets that subordinates perceive to be fair is likely to result in reciprocal behavior, implying that employees will behave more as "good organizational citizens" and are less likely to manipulate data regarding their achievements to increase financial and non-financial rewards (Clor-Proell et al. 2015). Moreover, MCSs that respect ethical standards may contribute to the work-life balance of employees by embedding information technology (IT)-based controls in policies and procedures that ensure that employees do not feel pressured to respond during their leisure time (Leclerq-Vandelannoitte 2017).

These examples illustrate the link between MAC and business ethics due to their focus on decision-making: On the one hand, MAC is used to facilitate and influence managerial decision-making (Sprinkle 2003). On the other hand, business ethics research is concerned with ethical decision-making in business and illuminates its antecedents and consequences with the ultimate goal of "improving the quality of business managers' ethical thinking and performance" (Green and Donovan 2010, p. 22). Against this background, we suggest that MAC information can substantiate ethical decision-making and thus reinforce ethical behavior. This idea is implicitly reflected in the literature, which indicates that ethical behavior is not only affected by individual factors but also by organizational factors (Craft 2013; James 2000; O'Fallon and Butterfield 2005; Treviño 1986).[4]

Our theoretical framework considers the roles of MAC with regard to decision-making and integrates the work of Rest (1986), which assumes that ethical decision-making comprises four sequential stages: (1) ethical recognition, (2) ethical judgment, (3) ethical intention, and (4) ethical action. These stages have been regularly considered by business ethics research (Loe et al. 2000; Tenbrunsel and Smith-Crowe 2008; Treviño et al. 2006).[5] The first stage refers to the employees' awareness that an ethical problem exists or that ethical principles apply to the situation (Treviño et al. 2006). To recognize an ethical issue, individuals need both a comprehensive view of the business situation and a clear idea of organizational objectives (Jones 1991). Accordingly, we argue that MAC information may facilitate the recognition of an ethical issue by providing sophisticated information on the status quo and potential outcomes of different courses of action. Moreover, MCSs comprise boundary systems, which set limits to employee leeway (Simons 1995; Widener 2007) and contribute to ethical recognition by fostering a common understanding of what comprises acceptable and inacceptable behavior. According to the second stage, employees must judge an issue or course of action as (un)ethical. In this context, individuals consider organizational objectives, rules, and norms as well as peer behavior and the expectations of superiors (Jones 1991; Treviño et al. 2006). MAC communicates targets and monitors their achievement. For this reason, management accountants must track the behavior of employees and evaluate its outcome. We argue that such insights from comprehensive information systems allow a superior evaluation of a given situation (decision-facilitating role) and may thus contribute to ethical judgments.

In the third stage, employees must decide what to do, i.e., prioritize ethical concerns over such issues as corporate financial profit or personal wealth (Jones 1991). The links between targets reflected by MAC information with financial rewards appear to be crucial in this regard (James 2000), given that economic theory expects individuals to prioritize

[3] Ethical decisions can be defined as "both legal and acceptable to the larger community" (Jones 1991, p. 367).

[4] Prior research frequently emphasizes reward systems as an important organizational factor (James 2000; Tenbrunsel and Smith-Crowe 2008; Treviño et al. 2006). These systems are part of the information systems provided by management accountants. However, our review suggests that other MAC information systems affect ethical decision-making as well.

[5] In the following paragraphs, we highlight the interconnections between the different stages of the ethical decision-making process and the decision-facilitating and -influencing role of MAC information using illustrative examples. These examples are not intended to represent an exhaustive list of these interconnections.

activities that are rewarded and to neglect others (Bonner and Sprinkle 2002). Thus, incentive systems that influence behavior toward ethical decisions should include financial and non-financial targets to avoid an overemphasis on financial performance (Ittner et al. 2003). Finally, the fourth stage refers to the actual behavior of employees who face ethical issues. The intention to behave ethically must be "translated" into actual ethical behavior. In this regard, transparency of (un)ethical decisions as provided via MAC information not only allows a proper evaluation of past ethical performance (decision-facilitating role) that may be considered, e.g., in promotion decisions, but is also likely to stimulate employees to take ethically desirable courses of action (decision-influencing role).

Against this background, our theoretical framework suggests that MAC information can influence and facilitate the different stages of the ethical decision-making process. This idea is reflected and substantiated by our literature review, which has inductively resulted in four different topic areas (management accountants, MCSs, budgeting and goal setting, and performance measurement systems (PMSs), see next section). Correspondingly, the literature reviewed considers that management accountants have a significant influence on ethical aspects in the context of MAC information because they are the process owners of corporate key processes, such as budgeting and management reporting and design and run the corporate financial and non-financial information systems (Burns and Baldvinsdottir 2005; Byrne and Pierce 2007). The literature reviewed analyzes how management accountants (should) behave vis-à-vis ethical issues. Given their prominent position as "mediators" between management and business units (Goretzki et al. 2018; Maas and Matějka 2009), we expect that management accountants can become corporate role models for and sponsors of ethical behavior by their behavior and by the type of information provided (e.g., exclusively reporting financial vs. reporting a balanced set of financial and non-financial performance indicators) and the design of MAC information systems (e.g., participative vs. top-down setting of objectives). More specifically, the reviewed literature in the *JBE* demonstrates that firms regularly utilize three different information systems (Sprinkle 2003) to stimulate ethical decision-making: MCSs, budgeting and goal setting, and PMSs. Our literature review is thus guided by a theoretical framework that suggests that the MAC information inherent in MCSs, budgeting and goal setting, and PMSs can facilitate and influence the four stages of the ethical decision-making process and thus contribute to an increased ethical performance. Monitoring this ethical performance closes the control cycle because the de facto achievements are recorded by the information systems and become the basis for the next control cycle.

Method

Our paper represents a systematic literature review that seeks to synthesize "research in a systematic, transparent, and reproducible manner" (Tranfield et al. 2003, p. 207; see also Hansen and Schaltegger (2016) for a recent example in the *JBE*). We build on MAC articles published in the *JBE* between the inception of the journal in 1982 and 2017.[6] Covering this 35-year period results in an encompassing and dynamic perspective on the development of the research area.[7]

To ensure a comprehensive database, we applied a five-step procedure. First, one of the authors searched for a comprehensive list of MAC-related terms[8] that built on past literature reviews in MAC (Hesford et al. 2007; Lachmann et al. 2017; Shields 1997) in the EBSCO Business Source Complete database. Second, this process was repeated using the Springer Link database—i.e., the online database of the publisher of the *JBE*—by the same author to ensure a comprehensive compilation of articles. The other author repeated these steps (Steps 3 and 4) to ensure the reliability of our data.[9] As a fifth step, we identified further articles by checking the reference lists of the articles identified in Steps 1–4 (Searcy 2012). When the individual authors were unsure whether an identified article fell into the area of MAC and business ethics, the case was jointly discussed between the authors and consensually resolved based on this joint discussion and the theoretical framework guiding our review.

[6] We considered all articles that were assigned to an issue or published "Online First" as of October 9, 2017, the day on which we conducted final checks of the completeness of our database.

[7] Note that our review does not consider articles in the area of executive compensation. Although some aspects of executive compensation—such as target setting for compensation formulas—are related to MAC, executive compensation is a very broad area that also touches, e.g., on market and corporate finance, corporate governance and law. To ensure a clear focus of our article, we limited our analysis to MAC used in internal delegation relationships, i.e., between managers and employees but not between top managers and firm owners.

[8] These terms are (in alphabetical order) balanced scorecard, budget*, controller, costing, management account*, managerial account*, management control, performance measurement, pricing, and transfer price. Note that an asterisk can be used in search engines as a substitute for any other letter(s). E.g., the search term management account* will return results for both management accounting and management accountant.

[9] For Step 1 and Step 2, we searched for the aforementioned MAC-related terms in the title of the article, while the term ethic* was searched for in the overall text. To identify additional potentially relevant articles, we broadened the queries in Steps 3 and 4 by searching for both the MAC-related term as well as the term ethic* in the overall text. These queries naturally returned a large number of results (sometimes several dozen or even more than one hundred articles) that were subsequently manually checked for relevant articles by one of the authors.

Although single papers might not be captured, the applied procedures give us confidence that no major trends or topics in relevant *JBE* papers were overlooked.

A similar procedure was applied for the coding of articles. First, one of the authors read all of the articles and coded them based on a coding manual that comprised the different codes, explanations of these codes, rules for distinguishing among codes, and examples illustrating the different codes. The coding manual was refined gradually during the coding process. More specifically, the coding comprised several stages. First, we considered the research method underlying each article. For this reason, we drew on the prior category schemes applied in the accounting literature (e.g., Birnberg et al. 1990; Endenich and Trapp 2018; Hesford et al. 2007; Lachmann et al. 2017) and distinguished surveys, which gather data based on standardized questionnaires disseminated by e-mail or mail; experiments, as studies in a laboratory setting, for which the researchers manipulate the independent variables and assign the corresponding treatments randomly to the participants; case studies and field studies, which gather data from the field based on interviews, observations, and internal documents; discussions in terms of papers that develop frameworks or discuss specific issues from a theoretical perspective without collecting empirical data; literature reviews as syntheses of prior literature that structure and discuss prior theoretical arguments and empirical findings; and mixed method research, i.e., papers employing more than one of the aforementioned empirical methods. Second, we analyzed the research area of each article. More specifically, we captured the topic of each article as precisely as possible and aggregated these inductive codes to four main areas: management accountants, MCSs, budgeting and goal setting, and PMSs. We used these four areas to structure our literature review by devoting one section of our review to each of these four areas. Third, we considered whether an article primarily focusses the decision-facilitating or the decision-influencing role of MAC information (Sprinkle 2003). Fifth, we identified the stage of the ethical decision-making process (recognition, judgment, intention, action) (Rest 1986). We considered an assignment to multiple stages of the process or to both roles of MAC information only if multiple stages were explicitly mentioned in the respective article or if both roles were equally illuminated.

Inter- and intracoder reliability was ensured by multiple codings of a selection of articles by the same author and by the double coding of a selection of articles by both authors. Intensive discussions between the authors accompanied the coding process and resulted in resolving all concerns raised by either author. If an article could not be unequivocally assigned to one of the roles of MAC information or one of the stages of the ethical decision-making process, both authors coded the article independently, compared their codings, and discussed which dimension was at the core of the article. Deviations were subject to discussion until the authors agreed on which coding was appropriate and consistent with the remaining codings. Overall, the procedures described ensured that our review fulfills the requirements of systematology, transparency, and reproducibility (Tranfield et al. 2003). Next, we present an overview of the articles that form the basis of our review.

Review of Previous Related Research in the *Journal of Business Ethics*

Overall, we identified 64 articles that created the basis of our review (see Table 1).[10] Considering four sub-periods, Panel A shows an increasing number of MAC-related articles published in the *JBE* since its inception in 1982, mirroring an increasing awareness of the ethical implications of MAC. As outlined, our content analysis yielded four inductively distinguished research areas: management accountants, MCSs, budgeting and goal setting, and PMSs. The increasing number of overall articles was particularly driven by publications in the areas of MCSs and PMSs. Although the early years were characterized by non-empirical articles (Panel B), the share of empirical studies is increasing. In particular, we observe that a diversified set of research methods was utilized in the two most recent periods. Empirical articles in the 1980s and 1990s relied exclusively on North American data, whereas papers published in the 2000s and 2010s increasingly relied on data from Europe and Asia (Panel C).

Table 2 provides a cross-tabulation of the two dimensions of our conceptual framework—the two roles of MAC information (Sprinkle 2003) and the four stages of ethical decision-making (Rest 1986). We observe that the influencing of ethical decisions is somewhat more frequently addressed in the empirical papers (57.4%) and that for both roles, the stage of judgment is most frequently considered. In the following sections, we first briefly introduce the general foci and recent developments and then turn to the ethical issues that were investigated in the four major topic areas.

[10] These 64 articles are marked with an asterisk in the reference list. Note that we considered non-empirical articles on MAC and business ethics published in the *JBE* in the quantitative-descriptive analysis of this section and for our overall argumentation, but we focus on empirical articles in subsequent sections. The non-empirical articles of our sample comprise the following (in chronological order): Woelfel (1986), Brooks (1989), Loeb and Cory (1989), Ottensmeyer and Heroux (1991), Hansen et al. (1992), Alder (1998), Maguire (1999), Mehafdi (2000), Keeble et al. (2003), Kerssens-van-Drongelen and Fisscher (2003), Martin and Freeman (2003), van den Brink and van der Woerd (2004), van Marrewijk (2004), Rosanas and Velilla (2005), Barsky (2008), Searcy (2012), Rodgers et al. (2015), Hansen and Schaltegger (2016), Cugueró-Escofet and Rosanas (2017), Pryshlakivsky and Searcy (2017), Hahn and Figge (2018), Hansen and Schaltegger (2018) and Murthy and Rooney (2018).

Table 1 Topic areas, research methods, and geographical settings of management accounting and control and business ethics articles

	Before 1990	1990–1999	2000–2009	Since 2010	Total
Panel A: topic areas					
Management accountants	3[a] (75%)[b]	1 (14%)	3 (13%)	3 (10%)	10
MCSs[c]	1 (25%)	5 (71%)	5 (21%)	9 (31%)	20
Budgeting	0 (0%)	0 (0%)	7 (29%)	4 (14%)	11
PMSs[d]	0 (0%)	0 (0%)	7 (29%)	13 (45%)	20
Other[e]	0 (0%)	1 (14%)	2 (8%)	0 (0%)	3
Total	4	7	24	29	64
Panel B: research methods					
Survey	1 (25%)	3 (43%)	5 (21%)	9 (31%)	18
Experiment	0 (0%)	0 (0%)	5 (21%)	6 (21%)	11
Case or field study	0 (0%)	0 (0%)	5 (21%)	6 (21%)	11
Mixed methods	0 (0%)	0 (0%)	1 (4%)	0 (0%)	1
Non-empirical	3 (75%)	4 (57%)	8 (33%)	8 (28%)	23
Total	4	7	24	29	64
Panel C: geographical settings					
North America	1 (25%)	3 (43%)	9 (38%)	9 (31%)	22
Europe	0 (0%)	0 (0%)	3 (13%)	8 (28%)	11
Asia	0 (0%)	0 (0%)	2 (8%)	2 (8%)	4
Africa	0 (0%)	0 (0%)	0 (0%)	1 (3%)	1
Multiple	0 (0%)	0 (0%)	2 (8%)	1 (3%)	3
Non-empirical	3 (75%)	4 (57%)	8 (33%)	8 (28%)	23
Total	4	7	24	29	64

[a]Number of articles published in the respective period

[b]Percentage of papers in the respective category of the total number of articles published during the period

[c]MCS: Management control system

[d]PMS: Performance measurement system

[e]Articles in the category *Other* comprise two discussions of ethical aspects of international transfer pricing and one empirical article on cost accounting in the health-care sector (Thibadoux et al. 2007)

Table 2 Theoretical focus of empirical articles

	Recognition[a]	Judgment	Intention	Action	Total
Decision-facilitating	5[b] (25%[c])	8 (40%)	2 (10%)	5 (25%)	20
Decision-influencing	7 (26%)	9 (33%)	3 (11%)	8 (30%)	27
Total	12 (26%[d])	17 (36%)	5 (11%)	13 (28%)	47

[a]Articles have been assigned to multiple stages of the ethical decision-making process only if multiple stages have been explicitly mentioned in the respective article. Otherwise, we assigned the article to the stage of the ethical decision-making process that represents the focus of the respective article

[b]Number of papers focusing on the decision-facilitating role of MAC information and the recognition stage of the ethical decision-making process

[c]Percentage of papers focusing on the decision-facilitating role of MAC information and the recognition stage of the ethical decision-making process of the total number of empirical papers focusing on the decision-facilitating role of MAC of information

[d]Percentages do not add up to 100% because of rounding

Management Accountants

The *JBE* has published a steady stream of research concerned with the ethical behavior of management accountants. In the Anglo-American world, management accountants are professionally organized; however, they regularly do not qualify with a professional accounting body and are generally educated at universities in most non-Anglophone countries (e.g., Brandau et al. 2013). Traditionally, management accountants regularly served a "bean counter" role by providing information for decision-making without being involved in decision processes (Byrne and Pierce 2007;

Lambert and Sponem 2012). Nevertheless, in recent years, they appear to serve increasingly as "business partners" and actively advise managers (Burns and Baldvinsdottir 2005; Endenich 2014; Goretzki et al. 2013). Given this increasing influence on managerial decision-making, it appears important to understand the antecedents of ethical decisions made by management accountants themselves.

The corresponding stream of literature can be divided into two groups; both focus on decision-making by management accountants. The first group, comprising papers mostly published in the 1980s, concerned the ethical guidelines of Anglo-American professional management accounting bodies: the Chartered Institute of Management Accountants (CIMA, UK), the Institute of Management Accountants (IMA®, USA),[11] and the Society of Management Accountants of Canada (SMAC). Woelfel (1986) provides a conceptual analysis of the IMA®'s Standards of Ethical Conduct. These standards were issued in 1983 and were subject to minor modifications in 2005 and 2017 (IMA® 2017).[12] The 1983 version of IMA®'s Standards of Ethical Conduct comprises 15 statements in four areas (competence, confidentiality, integrity, and objectivity) that cover issues such as maintaining professional competence by ongoing knowledge development, respecting laws and regulations, and maintaining confidentiality. Woelfel (1986, p. 371) concludes that the standards represent "a step towards professionalism." However, a survey of how vice presidents of finance and controllers perceive these standards reached an ambiguous conclusion (Moyes and Park 1997); although the respondents from Forbes-listed companies agreed with the majority of the standards, they criticized them for being too vague and general, thus providing insufficient guidance in "gray area" real-world situations.

Building on their criticism that the IMA®'s guidelines do not (or only in very rare cases[13]) consider the opportunity of external whistleblowing,[14] Loeb and Cory (1989) propose an alternative framework that explicitly includes external whistleblowing for the resolution of ethical conflicts if appeals within the organization have not been successful. The application of this approach, however, has not yet been subject to an empirical investigation. Given that such guidelines disseminate professional values, a related issue is the conflict between professional and organizational values. In this context, Shafer (2002) investigated the organizational-professional role conflict of management accountants. Data from a US survey indicate that ethical pressure increases the perceived organizational-professional role conflict and that higher levels of this role conflict lead to lower organizational commitment and job satisfaction.

Although the majority of the articles from the first group were published in the 1980s and 1990s and are descriptive in character, the paper by Shafer (2002) is indicative of an important change that occurred around the turn of the millennium. The more recent second group prioritizes the explanation of management accountants' ethical behavior and sheds light on the determinants that reinforce ethical decision-making beyond compliance with ethical guidelines. In this context, the survey of Libyan management accountants by Musbah et al. (2016) appears noteworthy. When faced with four scenarios of unethical behavior, respondents reporting that their companies have implemented a code of ethics do not differ from their counterparts reporting the opposite. Thus, it is important to accompany the issuing of a code of conduct by further efforts such as communicating the content and objectives of the code to all employees, instituting training sessions, and practicing managerial role modeling. Because the influence of the educational level of respondents does not significantly influence their ethical recognition, judgment, and intention, the authors suggest integrating ethics courses into the curricula for Libyan accountants to improve their ethical decision-making (Musbah et al. 2016).

The potential effects of teaching the ethics of managerial decision-making are analyzed by Awasthi (2008), who develops and tests a model that considers moral judgments to be an input of managerial judgment, which in turn lead to managerial intents and finally to managerial behavior. Cost and management accounting students from the US support the model when faced with a three-stage case of unethical behavior in a manufacturing setting. Notably, whereas taking an ethics course did not affect moral judgment of whether a decision is ethically wrong, students who took such a course were more likely to consider unethical decisions bad from a managerial perspective (i.e., in terms of a cost–benefit

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[11] Formerly known as the National Association of Cost Accountants and the National Association of Accountants. For the sake of clarity, we refer consistently to IMA® in this paper.

[12] IMA® members are required to comply with these standards; failure "to comply may result in disciplinary action" (IMA® 2017, p. 2). IMA®'s Statement of Ethical Professional Practice also includes a guideline for "Resolving Ethical Issues" that recommends using established company guidelines, discussion with an immediate or next-level supervisor, requesting advice from IMA®'s helpline, consulting one's own legal attorney, and disassociating from the company (IMA® 2017).

[13] In the 1983 version, IMA® mentions legal requirements and the opportunity to inform a person "engaged" by the company—likely to be the company's external auditor—on the ethical issue (Loeb and Cory 1989).

[14] Loeb and Cory (1989) distinguish between internal and external whistleblowing. Internal whistleblowing comprises "taking an issue to a level […] that is above an employee's direct superior" (Loeb and

Footnote 14 (continued)

Cory 1989, p. 903) and external whistleblowing "discussing the issue outside the employer organization" (ibid.).

analysis). Accordingly, students who have taken a course in business ethics appear to be more sensitive to moral issues in managerial decision-making.

While these studies refer at most to the first three stages of Rest's (1986) model, other papers capture ethical actions. The paper by Puyou and Faÿ (2015) is the only case study in this stream of research. The authors focus on ethical issues in the everyday work of management accountants arising from their role as mediators between corporate headquarters and business units. Building on a case study on a French airport retailer, the authors illustrate how management accountants—stating that they experience satisfaction from interaction with colleagues—suffer from producing masses of spreadsheets that hampers reflection and detaches from operational business units. By contrast, technical mastery of budgeting processes within tight timelines and "the beauty of figures" (Puyou and Faÿ 2015, p. 872) become a source of pride. Although the authors provide evidence for management accountants' unethical behavior, such as hiding behind their screens and manipulating performance indicators to satisfy superiors, they emphasize that other interviewees succeed by maintaining close ties with operational units and making sense of figures by regular site visits and interaction.

Given their frequent involvement in project assessments, escalating commitment represents a serious concern for management accountants. Escalating commitment occurs in agency settings (characterized by conflicting interests and information asymmetries) and describes managers who view failing projects with a positive bias. Against this background, Chang and Yen (2007) and Huang and Chang (2010) hypothesize and empirically demonstrate that based on experiments conducted in Taiwan, decision-makers with low (high) values of moral development have a reduced (greater) tendency to stop failing projects. Because MAC research frequently assumes agency issues, the authors make an important contribution by showing that moral philosophy can contribute to solving agency problems.

The empirical papers of this topic area rely on data from North America, Asia, Europe, and Africa and mostly employ survey or experimental methods. All four stages of the model by Rest (1986) were considered, and studies on management accountants and ethics were published over the entire period considered. The papers represent 75% of all the papers analyzed in the first sub-period (before 1990). Therefore, we argue that these publications established an important base for subsequent publications on MAC and business ethics by sensitizing the *JBE* readership to the role that ethics plays in the work of management accountants. These papers mostly consider the decision-facilitating role of MAC information. Moreover, the ethical guidelines of professional management accounting bodies discussed in the early relevant research provide important guidance and can encourage exemplary behavior that may result in a role-modeling function of management accountants that stimulates ethical behavior within organizations. Similarly, the importance of considering ethical issues in the university education and the corporate training of management accountants was highlighted.

Management Control Systems

MCSs comprise processes and mechanisms used by managers to influence the behavior of their subordinates toward organizational objectives (Bedford and Malmi 2015). These systems build on management accounting practices, such as management reporting and variance analysis, and non-accounting controls, such as administrative or cultural controls (Malmi and Brown 2008).[15] Given the objective of aligning employee behavior with the interests of their organizations, we might expect that MCSs primarily serve a decision-influencing function. However, scholars increasingly acknowledge that MCSs may also comprise "facilitating" elements that empower employees by increasing their autonomy, such as training and education, shared work ethos, or participation in organizational processes (van der Kolk et al. 2015). The underlying rationale is that employees will exploit this autonomy to achieve organizational objectives.

The papers on MCSs published in the *JBE* focus nearly exclusively, however, on decision-influencing and comprise three groups. The first group includes descriptive surveys that capture the dissemination of controls implemented to reinforce ethical behavior. In this regard, the survey of the Center for Business Ethics (1986) in a US setting and its extension in a Canadian setting by Lindsay et al. (1996) suggest that the majority of the firms surveyed implemented ethics-related control mechanisms such as codes of conduct and ethics-related employee training, but the associated communication, enforcement, and oversight lag behind. Accordingly, the question arises whether the companies are truly pursuing ethical decision-making or are only engaging in window dressing (Center for Business Ethics 1986; Lindsay et al. 1996). These two studies were complemented by Chen (2001) for Hong Kong companies. Whereas Chen (2001) shows that codes of ethics play a major role in instilling ethical behavior not only in Canada and the US but also in Hong Kong, an ethics-focused corporate governance appears to play a much stronger role in Hong Kong than in North America. Nevertheless, country

[15] Because MCSs are concerned with aligning the behavior of employees with the interests of their organizations, budgeting and performance measurement are crucial elements of MCSs (Lindsay et al. 1996; Rosanas and Velilla 2005). Given this distinctive role and the significant body of research that evolved in these two areas, we discuss budgeting and performance measurement in separate sections.

comparisons appear difficult given statistical concerns such as strongly varying response rates.

By contrast to these exploratory surveys, the second group of studies comprises surveys that are more explanatory as they analyze the relations between MCSs, ethics, and outcomes such as organizational performance. Goebel and Weißenberger (2017) argue that although formal control systems (i.e., explicit guidelines and formalized PMSs) may provide limited guidance for employees facing ambiguous ethical situations, an organization's climate and environment that intrinsically motivate employees to behave ethically may be well suited to helping the company pursue corporate objectives. Survey evidence supports this view and shows that informal controls—such as employee selection and training—are positively associated with an ethical work climate. Although this collective ethical awareness is not directly associated with increased organizational performance, an association exists via increased trust among employees. These results indicate not only that ethical behavior pays off but also the importance of informal control systems in increasing ethical awareness (Goebel and Weißenberger 2017).

Herremans et al. (2011) draw our attention to the differences between command-and-control structures and result controls. In command-and-control structures, strict instructions are given to employees that are expected to result in outcomes desired by the company. On the other hand, result controls provide direction by establishing and monitoring targets ex-post but do not prescribe the specific actions to be taken and thus empower employees to choose the most appropriate path. Such empowerment recognizes the knowledge and experience of employees and may be expected to positively affect their motivation and satisfaction (Hasgall and Shoham 2008). Accordingly, result controls can contribute to an ethical job design that needs to consider employee interests. Herremans et al. (2011) underline that such result controls appear appropriate in an area such as intellectual capital in which companies depend on highly qualified and motivated employees who prefer autonomy to bureaucracy. In particular, these employees might easily find employment elsewhere if they perceive control systems and job-design unethical.

While these studies implicitly refer to the recognition stage of Rest's (1986) model, others focus on ethical judgments. In this context, Donada et al. (2017) study the effects of MCSs and virtues (i.e., justice, courage, prudence, and temperance) on relationship quality and performance in buyer-supplier relationships. The authors demonstrate that a key individual's virtues are far more strongly associated with the quality and performance of buyer-supplier relationships than interorganizational MCSs. These researchers conclude that recruiting and training processes that guide and develop employee virtues can help improve interorganizational collaboration and performance.

Wijethilake et al. (2018) analyze how MCSs affect the influence of an environmental innovation strategy on organizational performance. Environmental innovation strategies aim at improving the environmental performance of companies based on measures such as reducing pollution levels and raw material inputs and fostering product stewardship. Therefore, such strategies are an important facet of an increasing demand for better corporate ethical performance toward multiple stakeholders. Specifically, Wijethilake et al. (2018) use Simons' (1995) levers of control framework to distinguish between the enabling and controlling uses of MCSs in the context of environmental innovation strategies. Interactive controls are intended to stimulate opportunity seeking and motivate employees by regular interactions and discussions between top management and employees. Alternatively, diagnostic controls focus on compliance and constrain the behavior of employees by measuring outcomes and comparison with predefined standards (Simons 1995; Wijethilake et al. 2018). Building on data from Sri Lanka, Wijethilake et al. (2018) show that an environmental innovation strategy does not improve organizational performance per se. Adding the moderating influence of MCSs, the authors observe that the controlling (enabling) use of MCSs negatively (positively) moderates the environmental innovation strategy-organizational performance relationship. Accordingly, companies intending to increase organizational performance by environmental innovation strategies must ensure that they properly align those strategies with the corporate context supported by an appropriate—i.e., enabling—use of MCSs (Wijethilake et al. 2018).

While these studies provide large-scale empirical evidence, the third group of papers provides case studies that gather in-depth insights into the interplay between MCSs and ethical behavior in specific organizational settings. Using case study data from a small US manufacturing company, Shapiro and Naughton (2015) and Shapiro (2016) analyze how the case organization embeds humanizing narratives (i.e., narratives that respect values such as dignity and human rights) into their MCSs to reach their operational and strategic objectives. A consideration of the core values of the founders in all of the control levers conceptualized by Simons (1995) could enable the company to embed the values into organizational practices and to manage tensions arising from the interplay among the company's financial, operating, and humanizing commitments.

Other studies focus on MCS issues in relation to different stages of Rest's (1986) framework in specific functional settings. In this context, increasingly important issues arise at the interface of MCSs and IT. Given the negative side effects of electronic surveillance, such as restrictions of employees' autonomy, privacy, and health (Ottensmeyer and Heroux 1991; Alder 1998; Martin and Freeman 2003), an important result was provided by Hawk (1994). Based on US survey evidence, Hawk (1994) suggests that the influence on employee stress and health associated with computerized performance monitoring can be leveled off by providing opportunities to discuss computerized performance data with superiors. Nevertheless, this opportunity appears to be insufficiently used (Hawk 1994). Within a longitudinal research design, Alder et al. (2008) show that ethical orientation (utilitarianism and formalism) and prior beliefs about monitoring tools affect the reactions of employees to monitoring systems. Accordingly, in addition to carefully designing and implementing monitoring systems, the characteristics of individuals who are monitored should be considered by companies introducing monitoring systems.

Based on a case study in a commercial division of a French telecommunications company, Leclerq-Vandelannoitte (2017) finds that ubiquitous IT-based controls can entail the perceived need for continuous availability, immediate responsiveness, and digital traceability. Because they are not presented as controls but as empowerment mechanisms and enablers of autonomy and flexibility, they appear less visible, potentially leaving employees unaware of being controlled. Most alarmingly, Leclerq-Vandelannoitte (2017) observes a lack of awareness of ethical concerns connected with the use of ubiquitous IT-based controls by those controlled and a strong release of responsibility for these ethical concerns at the managerial level.

Saini et al. (2008) emphasize the importance of management control for the marketing function; the authors provide first evidence that process controls can reduce ambiguity, whereas a strong focus on output controls may contribute to unethical marketing practices, such as promoting unneeded products or misrepresenting products or services. Moreover, the authors argue that the association between controls and marketing anomie is moderated by three contingency variables: resource scarcity in marketing, power of the marketing function, and ethics codification.

In summary, a considerable and growing literature on MCSs and business ethics has emerged. These studies rely frequently on data from North America (8 articles). Empirical papers rely on either surveys (9 articles) or case studies (4 articles) and mostly cover the recognition stage (Rest 1986). The papers mostly address the decision-influencing role of MAC information. The empirical studies turn our attention from those designing MCSs (i.e., management accountants, see last section) to those who are subject to MCSs and analyze how MCSs may promote (un-)ethical behavior. In this context, the enabling or empowering role of MCSs is highlighted. Embedded in a general ethical work climate, MCSs can reduce uncertainty, increase ethical awareness, and stimulate employees to make ethical decisions. Nevertheless, the related research stream has also brought the negative side effects of MCSs on employee health, stress, and work-life balance to the attention of a broader readership. Accordingly, management accountants must carefully evaluate the benefits and drawbacks of modern IT for both companies and employees.

Budgeting and Goal Setting

Budgeting is one of the traditional core areas of MAC (e.g., Libby and Lindsay 2010) and represents the creation of quantitative plans for future periods. Although budgets regularly represent financial targets (e.g., revenues or profits per sales person or business unit), budgets can also refer to non-financial targets, such as production goals (e.g., number of units produced per time period) or time budgets (e.g., time used to produce a unit or deliver a service). Budgets support strategy implementation, planning, controlling, resource allocation, and motivating employees by establishing challenging targets (e.g., Drury 2015). Budgeting processes generate targets, which are subsequently compared with actual outcomes. By establishing the basis on which to evaluate employees and business units, budgets serve both decision-making and decision-influencing purposes. As a major concern in the context of budget setting, budgetary slack implies that employees artificially overestimate future costs or underestimate revenues and profits to obtain more-easily achievable targets and subsequently higher (non)financial rewards. Building on employees' misrepresentations regarding their performance capabilities, budgetary slack results in unfair advantages due to the misallocation of resources (Brunner and Ostermaier 2017; Douglas and Wier 2000; Douglas and Wier 2005). Further ethical concerns arise during the process of goal attainment (Barsky 2008). When faced with challenging targets, decision-makers may unilaterally focus on the financial but neglect the ethical aspects of their decisions. Moreover, employees who have not been involved in target setting may behave unethically because they displace responsibility for their actions to those who imposed targets (Barsky 2008). Against this background, we distinguish between studies concerned with ethical behavior in budget-setting processes and those with ethical issues in goal-attainment processes.

Various factors were identified in empirical studies published in the *JBE* that are associated with budgetary slack creation. Building on a US survey, Douglas and Wier (2000) show that the ethical position of individuals (idealism vs. realism) helps to explain whether they tend to create budgetary slack. Those authors conclude that a strong ethical culture is the only effective antidote. This conclusion is reinforced by Brunner and Ostermaier (2017), who show that managers use peer dishonesty to justify their own dishonesty in requesting budgets. Notably, the experimental evidence indicates that managers adopt peer dishonesty more than they do honesty.

Building on Forsyth's (1980) taxonomy of ethical ideologies, Douglas and Wier (2005) compare the cultural influence on budgetary systems run by Chinese and US managers. While the empirical evidence underlines a greater participation in budgeting systems (and thus more opportunities for creating budgetary slack) and stronger incentives for budgetary slack creation (e.g., use of budget-based incentives) for US managers, the authors do not identify statistical support for greater budgetary slack creation behavior of US compared to Chinese managers. Against the background of the low explanatory power of the statistical models, Douglas and Wier (2005) call for further research endeavors to build a more comprehensive understanding of the ethical facets of international budgeting.

Chung and Hsu (2017) find that even in the absence of monitoring and reputational effects, some individuals provide honest budget numbers and give up personal remuneration instead of deliberately misleading for their personal gain. Building on an experimental setting, the authors show that individuals with high (low) cognitive moral development submit budget requests more (less) honestly. This finding is not only valuable for the development of recruitment and training processes but also for the design of incentive contracts: companies can build on trust contracts for managers attaining high levels of cognitive moral development instead of hurdle contracts that do not grant budgets if the submitted budget exceeds a specified hurdle (Chung and Hsu 2017).

Reck (2000) refers to the public sector and assumes that moral judgements may be influenced by variables such as political ideology (here: conservative, moderate, liberal), gender, and profession. Against this background, she analyzes the influence of moral judgment on the budget allocation decisions of municipal budget officers. The experiment indicates higher levels of moral judgment by females than by male respondents[16] but not for accountants vs. non-accountants. Nevertheless, there is no evidence of an association between the level of moral judgment and the resource allocation decision of an individual. Instead, other attitudes such as political ideology—a variable significantly correlated with budget allocation—may be relevant to resolving moral dilemmas (Reck 2000).

An important challenge in setting a budget is the choice of an appropriate budget level. Although easy targets are likely to be achieved, they are unlikely to represent the optimal performance budget because of low motivational effects. Conversely, stretch goals can be demotivating because they are unlikely to be achieved even in the case of significant efforts. Accordingly, stretch goals can result in a setting with increased incentives for employee fraud by misreporting as a response to the perceived unfairness of budgets (Drury 2015). In this context, Clor-Proell et al. (2015) find that this perceived unfairness of very high targets and the resulting tendency to misreport as retribution can be leveled off by the availability of promotions to higher hierarchical levels. In other words, a firm sending negative signals to employees by setting very high targets can counterbalance the negativity by positive signals in the form of promotions. For easily achievable targets, the authors do not observe the availability of promotions to have a significant influence on employee fraud.

Against this background, the second sub-stream of this topic area addresses ethical issues in the process of attaining budgetary goals. This stream has received significant attention by scholars interested in the audit sector that is characterized by a conflict between audit quality and audit cost. Ceteris paribus, the quality of an audit can be improved by increasing the number of audit hours, which in turn increases the costs accrued by the audit company (e.g., Sweeney et al. 2010). This conflict between the professional (i.e., quality) and commercial (i.e., costs) objectives of auditing firms is of major relevance because audit companies use time budgets (and other measures) to evaluate their staff auditors by assessing their ability to fulfill audit tasks within a given time budget. Thus, time budgets can become important reference points for performance evaluations in, for example, promotion and salary evolution decisions. Accordingly, a time budget implies ethical ambivalence between truthfully reporting a high number of hours and facing the risk of receiving a bad evaluation or dishonestly reporting a lower number than audited and receiving a good evaluation because spending fewer hours on a given audit task may be considered a sign of competence and efficiency in staff auditors. This underreporting of time not only violates the policies of auditing firms but also results in unfair advantages in promotion decisions, makes MCSs ineffective as planning and control tools, and artificially increases future budget pressures because reported hours generally serve as a reference point for establishing future budgets (Buchheit et al. 2003).

Although the underreporting of time has been characterized as widespread (e.g., McNair 1991; Otley and Pierce 1996), the results of Buchheit et al. (2003) suggest that

[16] Similarly, Sweeney et al. (2010) (see below) show significantly higher ethical evaluations of four audit-related cases describing unethical behavior by female when compared to male respondents. Roxas and Stoneback (2004), building on data from Asia, Australia, Europe, and North America, report that for their aggregated dataset, males' answers to an ethical dilemma faced by a management accountant were significantly less ethical than females' answers. Nevertheless, at the disaggregated level, results become insignificant for most countries.

audit time budgets have increasingly become more realistic, thereby decreasing pressures to underreport time. The authors discuss an increasing focus on other performance indicators such as teamwork capabilities and audit quality and stronger enforcement as reasons for this development. Sweeney et al. (2010) show that US auditors consider four cases of unethical behavior—one of them covering the underreporting of time—more seriously and report lower intentions to act unethically than do Irish auditors. They argue that the Sarbanes–Oxley Act (2002) resulted in an increased ethical awareness in the US audit sector (Sweeney et al. 2010). In addition, Sweeney et al. (2010) show that although an unethical tone at the top[17] has a significant influence on forming ethical evaluations, it has no influence on the intention to engage in unethical behaviors. Accordingly, those authors highlight the need to differentiate between making a judgment about the ethicality of an issue and the intention to act as a subsequent step of this ethical judgment (Sweeney et al. 2010).

Kaplan et al. (2007) analyze the influence of budgetary control system tightness in the context of earnings management (i.e., using managerial judgments to report favorably biased earnings). Building on experimental evidence, the authors consider the short-termism of budgetary control systems to be a potential explanation for engaging in earnings management and conclude that firms can encourage honest reporting by appropriately designed budgetary control systems.

Overall, the budgeting and goal setting articles discussed strongly focus on North American data (8 empirical articles) and build on surveys and experiments (surveys: 4 articles; experiments: 6 articles). These papers cover all stages of the Rest (1986) model except for recognition. The most frequently considered stage is the action stage. The majority of the articles focus on the decision-influencing role of MAC information. Nevertheless, it is worth mentioning that the literature stream seems to focus more on unethical behavior such as underreporting of time and budgetary slack creation than on ethical behavior. While we commend this awareness of ethical issues in the context of budgeting, more research may be required to learn more about how budgeting and goal setting may in fact foster ethical behavior in real-world business situations.

Performance Measurement Systems

PMSs represent sets of financial and non-financial measures used to operationalize strategic objectives and to make sense of performance achievements (Franco-Santos et al. 2012). They provide transparency concerning individual or organizational performance (decision-facilitating role) and incentivize managers to act in the organization's best interests (decision-influencing role) (Merchant 2006). Although the broader MAC literature has not fully neglected the ethical component of PMSs, it has been widely reduced to the aspect of fairness in the sense of the controllability principle[18] (Cugueró-Escofet and Rosanas 2017) as a predictor of intrinsic motivation and thus performance (Hartmann and Slapničar 2012). By contrast, the literature reviewed considers that performance measures are imperfect (e.g., subject to an evaluator's discretion) and suggests that they might—especially if linked with financial incentives—stimulate unethical behavior (Rosanas and Velilla 2005). Accordingly, from 2003 onward, an increasing number of papers addresses the interdependencies between PMSs and ethical behavior. In this context, we distinguish two groups of papers.

The first group focusses on questions of how PMSs should be designed and used to avoid unethical behavior and thus refers to the decision-influencing role of PMSs. These studies comprise a series of papers addressing criteria that PMSs should fulfill to reinforce ethical behavior and refer to different stages of Rest's (1986) model. Given that ethical PMSs must guarantee equal opportunities, Maas and Torres-González (2011) consider that subjective performance evaluations (i.e., the evaluator has direct personal influence on the performance evaluation) imply a potential for evaluation bias and gender discrimination. Dutch experimental evidence demonstrates that given a higher likelihood of being evaluated by a woman, women expect more positive evaluation outcomes and consider organizations more attractive in the case of subjective but not in the case of objective performance evaluations. For men, appraisal style (objective vs. subjective) and the likelihood of being evaluated by a woman do not influence performance evaluation expectations or perceived organizational attractiveness. Maas and Torres-González (2011) suggest that companies evaluating performance subjectively and intending to attract women to join the company must ensure sufficient female managers. Moreover, female managers may contribute to higher employee satisfaction by decreasing evaluation biases and discrimination in PMSs.

A subset of the papers from the first group refers to the implications of PMSs for ethical behavior in a non-profit context. Building on the assumption that reactions to performance appraisals will be determined at least partially by

[17] An unethical tone at the top is defined in a manner consistent with Douglas et al. (2001, p. 107) as the "ethical environment within the firm created through management practices and espoused values."

[18] The controllability principle states that managers should only be evaluated based on measures they can influence to maintain motivation (Burkert et al. 2011; Merchant 2006).

the perceived moral justifiability of the evaluation process, Dusterhoff et al. (2014) show that favorability of performance ratings, leader-member exchange, perceived utility, and perceived justice are positively and independently related to appraisal satisfaction in an organizational unit of a Canadian provincial government. Gamble and Beer (2017) emphasize that PMSs have far-reaching consequences for not-for-profits because of the importance of PMSs in obtaining legitimacy and financial resources from multiple stakeholders. Nevertheless, Gamble and Beer (2017) argue that PMSs that are borrowed from a for-profit context fall short in a not-for-profit context because these PMSs are neither able to simultaneously cover the creation of social and commercial value that characterizes the non-for-profit sector nor are they widely accessible for not-for-profits given complex implementation processes. Based on Canadian survey evidence, the authors suggest three principles—social connectedness, entrepreneurial awareness, and financial meaning—that should be considered in not-for-profit PMSs.

Referring to PMSs in German universities, Graf et al. (2017) explore how academics adopt their behavior vis-à-vis PMSs. Although their interviewees acknowledge a few positive consequences of PMSs, such as higher productivity and motivation to conduct research projects and disseminate their findings in various outlets, a significantly greater number of negative consequences are discussed, such as decreasing efforts in student supervision, teaching, and university administration (Graf et al. 2017). The last paper that focusses implications of PMSs for ethical behavior in a non-profit context is the work by Kneiding and Tracey (2009), which develops a PMS framework for Community Development Finance Institutions (institutions that offer credits in deprived communities). The framework emphasizes the need to consider various contingency factors in the design of the PMS instead of using a fixed set of performance measures. Specifically, the authors argue that the organizational structure, the type of lending, and the type of market served are important factors to be considered in the design of the PMS.

The second group of PMS papers builds on the increasing importance of environmental and social sustainability and addresses the question of how sustainability performance can be measured which appears important for both the decision-influencing as well as the decision-facilitating role. In light of our previously outlined understanding of ethical decisions as being those that are "both legal and acceptable to the larger community" (Jones 1991, p. 367), we consider sustainability activities that benefit society or the environment as ethical per se. The acceptance of corporate social responsibility (CSR) requires metrics that operationalize corresponding objectives and measure corporate performance in these areas (Keeble et al. 2003). Therefore, we argue that MAC can contribute to ethical decisions by providing a reliable measurement of corporate social and environmental performance and by communicating these measures to multiple corporate decision-makers, which reinforces awareness of the social and environmental consequences of organizational activities. Given that such sustainability PMSs are "a key component of any corporate sustainability initiative" (Searcy 2012, p. 240), the second research stream on PMSs concerns the challenges of measuring corporate social and environmental performance for managerial purposes. This stream mostly addresses the recognition and judgment stages (Rest 1986).

Against this background, Lisi (2018) analyzes factors influencing the reliance on social performance indicators and their influence on social and economic performance. Italian survey evidence suggests that top management commitment and economic motives—but not perceived stakeholder concerns—are associated with social performance indicators. Given that sustainability performance is difficult to capture, Salazar et al. (2012) suggest measuring the output of CSR activities at a project level instead of the CSR input at a company level to receive meaningful insights into the cause-and-effect relations between social projects and their benefits to stakeholders and the organization. The adequacy of their suggestions is supported by Mexican case data.

In the context of measuring corporate social and environmental performance for managerial purposes, particular attention was afforded to the Balanced Scorecard (BSC)—a strategy implementation tool that combines financial and non-financial performance measures (Kaplan and Norton 1992). The traditional design of the BSC, comprising the performance dimensions customer, internal business, learning and growth, and financial (Kaplan and Norton 1992), has been increasingly complemented by environmental, social, and ethical aspects to develop sustainability BSCs (SBSCs) (Hansen and Schaltegger 2016).[19] In this context, the options of including social, environmental, and ethical issues in the existing four perspectives of the traditional BSC or adding a fifth dedicated dimension are discussed (van der Woerd and van den Brink 2004; Bento et al. 2017). Nevertheless, Hahn and Figge (2018) argue that regardless of the underlying value system (e.g., profit- or care-driven), the SBSC is unsuitable for aligning corporations with sustainability that extends beyond the sustainability inherent in 'business case' strategies. Furthermore, those authors warn against stretching expectations in the SBSC, because rather than being a tool for radically changing companies toward sustainability, the SBSC represents a tool for implementing strategy (Hahn and Figge 2018; Hansen and Schaltegger

[19] Related extensions of the BSC with social, environmental, and ethical aspects have been named sustainability scorecard and responsive business scorecard (van Marrewijk 2004; Hansen and Schaltegger 2016).

2018). Management must first establish strategic priorities for sustainability, which an SBSC can subsequently help to implement (Hahn and Figge 2018). In this context, Masanet-Llodra (2006) studies how a greater emphasis placed by the Spanish case company on environmental responsibility triggered the implementation of an SBSC, whereas a traditional BSC did not previously exist in the company. Van der Woerd and van den Brink (2004) argue that an SBSC is appropriate for companies with ambitions in CSR that extend beyond compliance- and profit-driven motivations and must emphasize stakeholder interactions to be effective. Using two pilots from the Netherlands and Italy, the authors emphasize that the involvement of management, employees, and stakeholders appears necessary for a successful implementation.

In an experimental setting, Bento et al. (2017) show that participants consider CSR-related performance indicators implemented as a fifth dimension of a BSC to be less relevant than financial measures and are more willing to drop them in a redesign of the evaluation system. This bias against non-financial measures limits "the effectiveness of including CSR measures in the BSC as a way to encourage managers to engage in CSR behaviors" (Bento et al. 2017, p. 785).

We conclude that a considerable stream of research on PMSs and business ethics comprising empirical and non-empirical papers has emerged since the 2000s. These papers consider both roles of MAC information. This stream of research emphasized that even if PMSs are crucial to the alignment of employee behavior with wider corporate objectives, measuring performance represents an area in which increased vigilance is necessary to avoid unethical behavior. This vigilance is even more important if performance evaluations are linked to financial rewards, if evaluations are subject to managerial discretion and if PMSs rooted in a for-profit ideology are implemented in a non-profit context. Moreover, our review demonstrates that management accountants play an important role in facilitating and influencing decisions that move companies toward a better social and environmental performance. This social and environmental performance represents an increasingly important facet of the overall ethical performance of a company. From a geographical and methodological perspective, six of ten empirical papers rely on European data, and a diversified set of research methods was employed. The papers mostly refer to the first two stages—recognition and judgment—of Rest's (1986) framework.

Discussion and Conclusions

The objective of this paper is to provide a systematic review of the MAC and business ethics literature published in the *JBE*. For this reason, we developed a theoretical framework suggesting that although MAC information has traditionally been focused on financial performance, it may facilitate and influence ethical decision-making during the different stages of Rest's (1986) model. Building on 64 articles published over three decades, we identified four topic areas that substantiated this argument and showed that the *JBE* spawned a productive body of ethics research in the context of MAC—an area that has long been neglected by accounting ethics scholars in favor of studying ethical issues in financial reporting and auditing. We summarize selected findings of the four topic areas identified in Table 3.

Our review indicates several manifestations of an increasing maturation of this body of literature. First, the range of MAC practices investigated unfolds from primarily focusing on management accountants and MCSs to increasingly addressing issues in the context of budgeting and PMSs. Second, method diversity is increasing from primarily descriptive surveys to a growing utilization of experimental research, case methods, and explanatory surveys. Third, research on MAC and business ethics increasingly studies the interdependencies between MAC practices and individual and organizational variables. The analysis of their joint effects on ethical behavior provides valuable insights into the complex interplay between MAC and business ethics. Eventually, this body of literature increasingly focuses on the action stage of the ethical decision-making process (Rest 1986), which advances our understanding of ethical behavior because the preceding stages represent necessary but not sufficient conditions for ethical actions. Our conclusion that the *JBE* has gathered a rich and insightful body of literature on MAC and business ethics is eventually reflected by our observation that both the decision-facilitating and the decision-influencing roles of MAC information have been analyzed at all four stages of the ethical decision-making process. Given that we consider our article relevant for both practitioners (e.g., chief executive, financial and information officers, business controllers, internal and external auditors) and scholars, we discuss the implications of our review for business practice and research.

Practice Implications

Our paper offers several key insights that appear to be important from a practical perspective. First, the substream on management accountants suggests that the implementation of ethical guidelines developed by professional bodies and corporate codes of conduct is not sufficient to trigger ethical behavior. Instead, this implementation must be accompanied by communicating and explaining these guidelines to all corporate members; by training sessions, enforcement, and establishing channels for internal whistleblowing; or by installing ombuds(wo)men for cases of (suspected) misbehavior (Brooks 1989; Loeb and Cory 1989; Musbah et al. 2016). These insights

Table 3 Selected results per topic area

Topic	Summary
Management Accountants	These mostly early studies established an important base for subsequent publications by sensitizing the role that ethics plays in the work of management accountants Ethical guidelines of professional management accounting bodies provide important guidance and can encourage exemplary behavior that may result in a role-modeling function that stimulates ethical behavior The importance of considering ethical issues in the university and corporate training of management accountants has been highlighted
Management Control Systems	By designing them as empowering controls and embedding them in a general ethical work climate, MCSs can reduce uncertainty, increase ethical awareness, and stimulate employees to make ethical decisions Potential negative side effects of MCSs on employee health, stress, and work–life balance must be considered Management accountants must carefully evaluate the benefits and drawbacks of modern IT for companies and employees
Budgeting and Goal Setting	Unethical behavior in the form of budgetary slack creation and underreporting of time in the audit sector are prominent topics covered by this research stream A strong ethical culture is considered to be an effective antidote against the widespread practice of budgetary slack creation Budgetary slack creation may be affected by individual characteristics such as political ideology or cognitive moral development but may also differ between countries
Performance Measurement Systems	The design of PMSs requires increased vigilance if they are linked with financial rewards, if evaluations are subject to managerial discretion, and if PMSs rooted in a for-profit ideology are implemented in a non-profit context As experts in measuring and communicating decision-relevant information, management accountants play an important role in corporate initiatives toward better social and environmental performance CSR-related performance indicators may be less accepted among managers than financial measures

appear particularly important given that the impact of management accountants in fostering ethical behavior is twofold. On the one hand, they design the information systems that are used for facilitating and influencing managerial decision-making. In this regard, an awareness of ethical concerns may contribute to the anticipation and avoidance of adverse behavioral effects. On the other hand, management accountants are increasingly involved in decision-making (business partner role). Accordingly, the literature indicates that management accountants must fulfill a role model function—often referred to as tone at the top or ethical climate (Sweeney et al. 2010; Goebel and Weißenberger 2017). In this regard, an increased focus on the ethical aspects of MAC in the professional and university education of management accountants may contribute to higher ethical work standards.

Second, our review highlights the adverse ethical effects of the MAC information systems that firms must be aware of. For example, budget rigidity or high target levels may negatively affect honesty in the budget-setting process (Clor-Proell et al. 2015; Kaplan et al. 2007), and output controls may encourage unethical practices (Saini et al. 2008). Therefore, practitioners must be aware that even though these characteristics appear important in light of the decision-influencing role of MAC information, their effectiveness may be put into perspective by unethical behavior. Correspondingly, the insights summarized in our paper may encourage practitioners to reconsider their MAC information systems, for example, by relying on flexible budgets with attainable targets or, depending on the context, on process controls.

Third, our paper highlights suggestions for the mitigation of these issues that extend beyond the redesign of MAC information systems. A particular suggestion is that such systems must be embedded in an organizational climate that intrinsically motivates employees to behave ethically. Such a climate can be reinforced by informal as well as enabling control elements (Goebel and Weißenberger 2017; Wijethilake et al. 2018). Moreover, the involvement of employees in the budgeting process or the development of a SBSC appears likely to promote ethical behavior (Barsky 2008; van der Woerd and van den Brink 2004). Personal interaction appears to be important because providing feedback and discussion channels on performance evaluations instead of exclusively focusing on computerized performance feedback may foster ethical behavior (Alder 1998; Hawk 1994). These instances suggest a repositioning because MAC, which historically was placed inside company frontiers and often worked detached from operational business units, must broaden its perspective and involve a broad variety of internal and external stakeholders to contribute to ethical business practices.

Research Implications

In addition to these practical implications, our review enables us to draw conclusions regarding future research. In this context, it appears to be important to consider why in traditional leading accounting journals the link between MAC and ethical decision-making has been covered by a small number of articles only. We argue that one reason may be the limited awareness of the ethical components of MAC in both academia and business practice. Widespread euphemisms such as underreporting of time (more correct: manipulation of time records; Sweeney and Pierce 2006) or budgetary gaming (more correct: lying in budget requests; Brunner and Ostermaier 2017) may be indicative of this concern. Against this background, we hope that this paper contributes to an increased awareness of ethical issues in MAC and thus encourages further research. Such awareness can also increase the willingness of practitioners to participate in corresponding research endeavors. Our analysis suggests that data-access restrictions—a general issue in MAC because researchers cannot rely on publicly available databases (e.g., Zimmerman 2001)—are even more of a concern in the context of ethics: the confidential and hidden nature of the subject appears to be one major factor that hinders empirical studies. Consequently, researchers frequently rely on experimental designs in which the participants judge a hypothetical ethical dilemma. Although these studies imply a high level of internal validity as observers of an ethical issue in an abstract setting, participants may behave differently in a real ethical dilemma. Other strategies used to bypass data-access problems imply reliance on anecdotal evidence or analyzing ethical issues in a hidden manner when officially analyzing more general accounting and control issues (that may themselves raise concerns from a research-ethical perspective). The case study approaches selected provide in-depth insights into ethical issues in real-world settings; however, their results are not statistically generalizable. Against this background, we hope that as companies become more aware of ethical challenges, they may also become more open to supporting empirical research projects as long as good research practices such as transparency and confidentially are respected. If the willingness to participate increases, the employment of mixed method approaches that combine research methods with high internal validity and methods with high external validity may contribute greatly to our knowledge.

In addition to these general concerns, we highlight several areas in which further research could lead to valuable insights. A major insight emerging from our review is that MAC information systems interact with the ethical work climate in an organization (e.g., Douglas et al. 2001; Goebel and Weißenberger 2017). Therefore, future research could greatly advance our understanding of the link between MAC information systems and business ethics if the research considers the ethical work climate as a moderator. This suggestion reinforces the aforementioned concern that experimental research should be complemented by further studies in the field to capture these interdependencies. Moreover, we argue that further research on the interactions between different MAC information systems appears promising. In particular, our review suggests that empowering control elements that foster employee autonomy may reinforce ethical decision-making (Herremans et al. 2011; Wijethilake et al. 2018). The MAC literature indicates that such elements imply a high degree of transparency concerning the MAC information systems implemented (e.g., Ahrens and Chapman 2004). Notably, such transparency may reinforce unethical behavior if it discloses peer dishonesty, as observed by Brunner and Ostermaier (2017). Therefore, a closer examination of the interdependencies between different MAC information systems would be an interesting area of research.

In addition to the moderating role of the ethical work climate, our literature review also suggests that individual characteristics interact with MAC information systems (Alder et al. 2008; Chung and Hsu 2017; Douglas and Wier 2000). The consideration of further individual characteristics and attitudes thus represents an additional promising field for future research (Reck 2000). In the area of budgeting and goal setting, ethical issues in the goal-attainment process have not yet been sufficiently addressed. In this regard, Barsky's (2008) propositions on ethical dilemmas in goal attainment are an important starting point for future empirical studies. Regarding the budget-setting process, the involvement of employees as opposed to a top-down setting of objectives is a promising avenue. With respect to sustainability PMSs, the operation of such systems remains an underdeveloped research area (Searcy 2012). In particular, the effects of balancing financial and non-financial performance indicators of ethical decision-making require further attention. Moreover, novel elements of PMSs, such as subjective or relative performance evaluation, have scarcely been considered, although they are likely to affect ethical behavior. In this context and considering reports on excessive managerial compensation even in the case of poor managerial performance, the area of executive compensation could be considered in a separate literature review. Our review did not consider executive compensation to ensure a clear focus on MAC issues as internal delegation relationships between managers and employees (see footnote 7).

Concerning MCSs, prior research has neglected the idea that they may have more of a facilitating character by empowering employees (van der Kolk et al. 2015). Therefore, it would be interesting to investigate whether and how facilitating controls influence ethical behavior. Moreover, as the digital revolution affects MAC, new forms of control are likely to emerge (Quattrone 2016), thus potentially imparting new research momentum. With respect to management accountants, a productive avenue for future research might be the change in their role from "bean counter" to "business partner" (Goretzki et al. 2013). In this context, it may be interesting to analyze whether the role of management accountants influences their ethical behavior and whether they can leverage their increasing influence on corporate processes to promote ethical decision-making by managers.

Moreover, we call for efforts to balance the literature stream from a geographical and methodological perspective. This point is important because although each method has its pitfalls, the use of various methods can contribute to a holistic understanding of the phenomena under study (e.g., Bonner et al. 2012; Lachmann et al. 2017). Moreover, while Sweeney et al. (2010) and Douglas and Wier (2005) show that the national context is an important factor to fully understand the ethical aspects of MAC, their work may be considered a mere first step toward fully understanding these ethical challenges in an international context. Accordingly, their work must be complemented by additional research endeavors such as case and field studies that could not only provide the necessary contextual background but also address the still-limited body of research focusing on the action stage of 'real' ethical decision-making processes.

Limitations of the Study

We acknowledge several limitations of our systematic literature review. Although single publications in the *JBE* related to MAC may have been missed, we are confident that the systematic procedure applied ensured that no major trends in the area were overlooked. The scope of our review could be broadened by adding further publication outlets. Nevertheless, previous literature reviews and our own database search have demonstrated that traditional accounting journals have only published a small number of papers on MAC and business ethics. Against this background, our approach allows us to highlight the role of the *JBE* in promoting this stream of research. The maturity of the literature we highlight imparts confidence that related research will continue to appear in the *JBE*. Thus, we hope our review contributes to the reinforcement of the further accumulation of knowledge on MAC and business ethics.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflicts of interest.

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The 64 articles that comprise the database of our literature review have been marked with an asterisk

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