

Digital Accounting Information System for Non-financial Disclosure: A Case Study Analysis



Valentina Beretta, Maria Chiara Demartini, and Sara Trucco

Abstract The disclosure of non-financial information (NFI) is becoming more and more relevant worldwide, especially after the directive 2014/95/EU. The relevance of the preparation of the non-financial information is increasing even with regard to the role of the Information Technology (IT) system. The review of the prior literature, indeed, shows a gap in the analysis of which are the most effective IT audit tools and procedures that may be used for providing reliable non-financial information. The main aim of this research is to analyze the role of the IT in the preparation and in supporting the control of the reliability of non-financial data. In order to reach the research aims, we apply a qualitative case study based on interviews and the triangulation of this evidence with a secondary source (such as an annual report or a non-financial disclosure). Therefore, researchers, thought an exploratory approach, carried out semi-structured type interviews. We selected three case studies listed on the Milan Stock Exchange market. The interviewees were actors responsible or substantially involved in the process of the non-financial information. Results of our research show that collecting and reporting data for non-financial disclosure by using a digital accounting information system represents a great challenge for the company. The interviewee stated that the digital accounting information systems are pivotal for the data collection and for the programming phase. Results show that collecting information in a more secure way is needed.

Keywords Digital accounting information · Non-financial information · Case study analysis

V. Beretta · M. C. Demartini
University of Pavia, Pavia, Italy

S. Trucco (✉)
Università degli Studi Internazionali di Roma, Roma, Italy
e-mail: sara.trucco@unint.eu

1 Introduction

The disclosure of non-financial that is environmental, social and governance-related (ESG) information is becoming more and more important worldwide, especially after the introduction of the directive 2014/95/EU “*disclosure of non-financial and diversity information*” (Bozzolan et al. 2003; Caglio et al. 2020; Merkl-Davies and Brennan 2007). In particular, the mentioned directive may help firms in disclosing high quality, relevant, useful, consistent and more comparable non-financial information in order to be transparent especially with external stakeholders. Hence, starting from the fiscal year 2017, according to the directive 2014/95/EU, larger companies are obliged to disclose some kinds of non-financial information by following a “comply or explain” approach (Hummel et al. 2020). Indeed, scholars agree that disclosing non-financial information is useful to reduce the information asymmetry between external and internal stakeholders, to attract investors and to improve the firm’s consensus and reputation among stakeholders (Dhaliwal et al. 2011). Therefore, professional associations and academics agree that an increase of such information should help companies in creating long-lasting value. Moreover, some scholars have pointed out that even financial analysts seem to positively perceive the relevance of the non-financial information and the non-financial indicators (Breton and Taffler 2001; Rogers and Grant 1997).

However, the company’s reputation and the value relevance of the information disclosed may increase only if the corporate disclosure is reliable (Anderson 1998). Previous studies stated that external assurance on non-financial disclosure might bring about positive effects on the perceived credibility of such types of information (Brown-Liburd and Zamora 2015; Pflugrath et al. 2011). As since the introduction of the European directive, the non-financial information became mandatory for large companies, some regulations are needed for helping external auditors in carrying out tests and procedures to verify the reliability of data. In the Italian setting, for instance, Consob requires that companies may choose between two different kinds of external assurance on non-financial information, which are limited assurance and reasonable assurance.

On the other hand, relevant criticisms of the non-financial reporting process are the lack of standardized metrics to assess non-financial performance and a lack of a generally accepted framework (at both national and international level) to guarantee the reliability of the non-financial information. Indeed, formal relationships between the different internal stakeholders in the preparation of the non-financial information are often replaced by informal ones. Since the reporting of sustainability practices is an ongoing process, more informal channels are used to share non-financial information between different teams (Toth 2012).

The relevance of the preparation of the non-financial information is increasing even with regard to the role of the Information Technology (IT) system (Barth et al. 2017; Ergüden et al. 2017; Healy and Palepu 2001). Indeed, the IT system should preserve the property and integrity of data, and should help firms and managers to

align IT requirements with business goals, by defining useful IT governance policies (Moeller 2010). A weak IT system may bring about material misstatements in corporate reporting; such risks linked to a weak IT system may negatively affect the integrity, accuracy, completeness, reality and availability of company's reports (Klamm and Watson 2009). The reliability of corporate reports relies mainly on IT system and internal controls, and scholars agree that there is a link between the features of the IT system and a well-designed internal control system (Daneila et al. 2013).

Recent studies highlight an increasing interest on IT audit and on its role in improving the overall quality of information in a firm (Stoel and Havelka 2021). Some scholars focused their research on the role that IT auditors have in helping firms meet compliance requirements and verifying the ability of IT system to create value to the company (Dzuranin and Mălăescu 2016).

However, the review of the prior literature carried out by studying papers in academic journals founded in the major scientific databases (such as ebsco-host and google scholars) shows a gap in the analysis of which are the most effective IT audit tools and procedures that may be used for providing reliable non-financial information. Therefore, the main aim of this research is to analyze, through a qualitative research method based on interviews, the role of the digital accounting information in the preparation of non-financial disclosure and in supporting the control of the reliability of non-financial data. Therefore, the research questions that the paper attempts to answers are: *RQ1: To which extent is IT able to support the data collection into the firm? RQ2: To which extent is IT able to support the predisposition of the NFI? RQ3: To which extent is IT able to support the control of the reliability of data?*

The remainder of the paper is organized as follows: Sect. 2 analyses literature review and presents the research questions; Sect. 3 presents research methodology; Sects. 4 and 5 present results, discussion, limitations and future developments of the research.

2 Theoretical Background

Accounting Information System (AIS) produces knowledge from data and ensures efficiency of the operations and effectiveness of reliability of financial and non-financial data and legal compliance (Toth 2012); therefore, the quality of reporting system is related to the quality of the entire data elaboration process. This process thus supports the decision-making process (Madnick et al. 2009), since one of the main aims of the AIS is to support decisions by providing the right information, in the right time at the right person (Fischer 2012), thereby communicating useful information to both external and internal stakeholders (Teru et al. 2017). Indeed, some studies found that the quality of the decision-making process depends on the quality of data produced by the AIS (Calvasina et al. 2009; Caserio 2011; Fisher et al. 2016) and on the consistency between the architecture of data and structure of the business (Vasile and Mirela 2008). One of the most advanced integrated IT

tools used by firms are represented by Enterprise Resource Planning systems (ERP) (Granlund and Malmi 2002). These tools are useful to collect and integrate data by using a common database, and thus they represent the basis for a good information flow inside the firm and for the overall accounting process (Chapman and Kihn 2009).

Literature about advantages related of having an ERP, and more in general a digital accounting information system, is quite abundant; in particular some scholars highlight that the adoption of a new IT system may produce some effects on both financial and non-financial performance indexes (Florescu 2007; Skibniewski and Ghosh 2009; Trucco and Corsi 2014). In general, an IT adoption is useful to integrate business departments and processes, thereby reducing the business process complexity (Broadbent et al. 1999; Karim et al. 2007). Within this context, a stream of literature focuses on the crucial role that a digital accounting information system can have in fostering the relationship between external financial information and internal managerial information. Indeed, the IT system could reduce the gap between financial accounting information and management accounting information and between internal and external stakeholders (Caglio 2003; Innes and Mitchell 1990; Taipaleenmäki and Ikäheimo 2013).

However, other scholars focus their studies on the risks and costs related to the IT system adoption, by highlighting that the most relevant risk related to the strategic investment of having a new IT is that the failure of the IT adoption could even lead to firm's bankruptcy (Davenport 1998; Markus et al. 2000). Furthermore, some scholars found that some IT investments (such as the adoption of a new ERP system) would allow managers to use more discretion in the preparation of accounting information and thus to favor data manipulation (Brazel and Dang 2008). Costs related of having the AIS are both monetary and relative to the human resources required to adopt and manage the IT system within the firm (Granlund and Malmi 2002). Nevertheless, scholars agree the effects of AIS adoption should be analysed through a holistic viewpoint (Gattiker and Goodhue 2005), since the process of AIS adoption deeply affects the entire company and each function (Rose and Kræmmergaard 2006). Several studies investigated the effect of the AIS adoption on corporate performance measured by financial, organizational and social indexes, by highlighting mixed results about it (Nicolaou 2004; Poston and Grabski 2001; Trucco and Corsi 2014).

Therefore, the analysis of the prior literature about this topic shows mixed results about the support of the IT system on the data collection into the firm and, to the best of our knowledge little is known about the support of the IT system to the predisposition of the NFI. On the basis of this theoretical background and with the aim to fill the mentioned gap in the literature, the research questions are expressed as follows:

RQ1: To which extent is IT able to support the data collection into the firm?

RQ2: To which extent is IT able to support the predisposition of the NFI?

The relevance of the role of the IT system within the context of a firm is increasing even with regard to the provision and to the assurance of the non-financial information, since non-reliable data may damage the competitiveness of firms (Barth et al. 2017; Ergüden et al. 2017; Xu 2009). Sajady et al. pointed out that the adoption of AIS may lead to a more effective internal control and a general improvement of the

quality of financial disclosure and of the business transactions. We argue that similar considerations may be extended to the side of the quality of the non-financial disclosure. Moreover, some scholars examined the effects of the information system on the level of honesty in managerial reports, by finding that the presence of an IT system increases managerial honesty, even if, according to previous studies, the honesty is lower when the IT system is accurate and vice versa (Hannan et al. 2006).

Despite these considerations, Brazel and Dang found a decrease in the reliability of financial disclosure in the years after the AIS had been adopted; this could happen because of a potential increase in the discretion that managers may use in the predisposition of accounting information (Brazel and Dang 2008). In fact, AIS allow managers greater access and control of financial information (Dillon 1999).

However, the analysis of the prior literature shows a gap regarding the IT audit tools and procedures that may be used for providing reliable non-financial information and for carrying out the assurance of non-financial disclosure; when the AIS is not well designed and built, the system is not able to produce useful information to satisfy stakeholders' needs. Therefore, recent studies show an increasing interest on IT audit and on the consequent overall quality improvement inside the company (Alagic et al. 2018) and some scholars has called for additional research in the area of the IT audit in general area (Curtis et al. 2009; Weidenmier and Ramamoorti 2006). Furthermore, there is little practical guidance for guarantee the reliability of non-financial disclosure from both internal and external viewpoint (Cohen and Simnett 2015).

We grounded our study on the legitimacy theory (Hopwood 2009) and the impression management approach, since the existence of an IT in a firm could represent a signal for external stakeholders, which allows them to make inferences of the quality of the disclosure (Hannan et al. 2006).

On the basis of these considerations, the last research question is expressed as follow:

RQ3: To which extent is IT able to support the control of the reliability of data?

3 Methodology

In order to reach the research aims and to answer the research questions, we apply an interpretive perspective through a qualitative approach. More specifically, the researchers' observations based on their contact with the interviewees have been combined with the triangulation of this evidence with secondary sources (Toth 2012).

In general, this approach allows scholars to improve the quality of the research: indeed, it was possible to understand the experience and perceptions of the participants inside the firms as well as to have insights on the corporate reporting and NFI. Semi-structured interviews have been carried out by the researchers thought an exploratory approach (Yin and Moore 1988). Three different case studies have been selected since they provide rich and insightful descriptions of different perceptions of a phenomenon (Yin and Moore 1988). Five interviewees took part to the study.

Privacy and confidentiality have been ensured by conducting the interviews in a environment and modality that have been jointly chosen by the researcher and the respondents and by adopting an informal and conversational tone. By adopting the Framework Method, the interviews have been recorded using a digital voice-recording device in order to ensure the verbatim transcription of the interview, followed by the familiarization of the researchers with the topic and the interpretation of the results.

We selected three case studies listed on the Milan Stock Exchange market. The interviewees were actors responsible or substantially involved in the process of the non-financial information.

The semi-structured interviews are focused on the investigation of the role of IT in three main areas, which are the data collection phase, the support for the predisposition of NFI and for the control of the reliability of data. The questionnaire was structured as follows:

- Are you obliged to disclose non-financial information according to the directive 2014/95/EU? If so, did you start drafting the NFI only after being subjected to the obligation? If not, who in the company proposed the drafting of the NFS? How long ago did the process start?
- How are the various corporate roles usually mostly engaged in the corporate information flow, such as the Chief Financial Officer, the Investor Relator and the Controller, involved in the process of developing corporate communication with particular reference to NFI?
- Is your non-financial disclosure subject to assurance? If so external/internal? If it is subject to external review, what tests are carried out to verify its reliability? How can company information systems help internal and/or external auditors in carrying out their functions to verify the reliability of the information?
- How can company information systems support the integration process between the area of financial accounting and that of management accounting?

Furthermore, we downloaded the NFI of the selected firms from their websites in order to have a better understanding of the creation process of the corporate reporting.

4 Results

Results of our research show that collecting and reporting data for non-financial disclosure by using a digital accounting information system represents a great challenge for the companies included in the sample. The interviewees stated that the digital accounting information systems are pivotal for the data collection and for the programming phase. Results show that collecting information in a more secure way is needed.

“Alpha” is a big bank (with more than 2,000 employees and more than 200 branches in different Italian regions) which is listed on the Milan Stock Exchange market, subject to the obligation of the non-financial disclosure. The interviewee,

represented by the head of financial statements and sustainability, has been actively involved in the preparation of (non)financial disclosures since 2016.

Results show that different actors and data sources are involved in the preparation of non-financial disclosure through an unstructured process. IT plays a fundamental role in collecting data, even if thus for the collection of financial and non-financial data occurs separately. However, the expectation for the future is to have the same data collection tool/software for both the typologies of data required. In addition, the interviewee stated that IT provides support also in checking the truthfulness of data, not only during the collection phase, but also in the control one.

“Beta” is an information provider mid cap company which is listed on the Milan Stock Exchange market and that employs 2,600 people in 45 Italian operational or commercial branches. The interviewees are the head of investor relations and the CFO.

Results show that there are two different systems, one for accounting and the other for human resources, which are used to collect all the relevant financial and non-financial data. As for the case of “Alpha”, the expectation for the future is to have a single system. IT supports the internal control of the truthfulness of data, before the external control of the auditors.

“Gamma” is a service company, which manage different airports, and it represents one of the most important airport systems in Italy. The interview has been conducted with the controller who is also responsible for the non-financial disclosure. As for the previous cases, since Gamma is a listed firm, therefore it is obliged to prepare and disclose the NFD.

Results show that both electronic and in paper format registries are used in data collection phase. Differently from the previous cases, financial accounting and management accounting areas are integrated and, therefore, there is integration also between financial and non-financial information. IT is of a great support in this case for the exploitation of data and databases generated by SAP (the software used by the firm) by auditors, thus in the control phase.

Results related to the role of IT in support of the data collection phase, the predisposition of NFI and the control of the reliability of data are provided in Table 1.

5 Discussion, Limitations and Future Development

The main aim of this paper is to analyze the role of the digital accounting information in the preparation of non-financial disclosure and in supporting the control of the reliability of non-financial data. Indeed, previous studies underlined a gap in the literature with reference to the use of audit tools and procedures that may be adopted in preparing NFI (Alagic et al. 2018; Cohen and Simnett 2015; Curtis et al. 2009; Weidenmier and Ramamoorti 2006). While it is common knowledge that IT could help collecting and systematizing data, little is known about how it could be done.

Table 1 Results description

	<i>IT to support the data collection</i>	<i>IT to support the predisposition of NFI</i>	<i>IT to support the control of the reliability of data</i>
Alpha	<ul style="list-style-type: none"> • Different actors and different data sources involved • Unstructured process 	<ul style="list-style-type: none"> • State of the art: not integrated • In the future: the same society for collecting both financial and non-financial information 	<ul style="list-style-type: none"> • Checking of the truthfulness in both data collection and control phases
Beta	<ul style="list-style-type: none"> • Two systems (accounting and human resources) cover the data collection for all the group • In the future: integration of a sustainability system 	<ul style="list-style-type: none"> • In the process of having a single ERP 	<ul style="list-style-type: none"> • Checking of the truthfulness of data internally, before the auditors' controls
Gamma	<ul style="list-style-type: none"> • Both electronic and in paper format registries 	<ul style="list-style-type: none"> • Integration between financial accounting management accounting areas and between the financial information and the non-financial one 	<ul style="list-style-type: none"> • Exploitation of data and databases generated by SAP (the software used by the firm) by auditors

The study contributes to the literature in several ways. First, it contributes to the literature of mandatory non-financial disclosure, by highlighting the relevance of having a formal template and a framework in favoring the process of collection and predisposition of information and improving the quality of the non-financial reports (Doni et al. 2019).

Second, the research contributes to the literature on AIS, by highlighting the relevance of AIS in supporting the process of predisposition of the corporate reporting and the control of reliability of financial and non-financial information (Toth 2012).

Third, the research contributes to the stream of literature which consider an AIS/ERP as a facilitator, motivator and even an enabler for the integration between the area of financial accounting and that one of management accounting (Lukka 2007; Trucco 2015). In fact, the non-financial information, more qualitative in nature and future oriented than the financial information push firms to use sophisticated and integrated IT system able to create a common database.

Results of this study provide evidence for the support provided by IT in ensuring reliability of financial and non-financial data (Toth 2012). Thus, adopting IT systems in collecting NFI provides support for the decision making process as well (Fischer 2012; Madnick et al. 2009). According to previous studies, indeed, the quality of the decision-making process is related to the one of the data produced (Calvasina et al. 2009; Caserio 2011; Fisher et al. 2016).

This study provides also evidence that the adoption of an IT system in collecting NFI is useful for the integration of different processes and, also, of the different disclosures of the company (Broadbent et al. 1999; Karim et al. 2007). More specifically, the gap between financial and non-financial information could be reduced

(Caglio 2003; Innes and Mitchell 1990; Taipaleenmäki and Ikäheimo 2013). In addition, more discretion is adopted in the preparation of NFI when investments in IT are made (Brazel and Dang 2008).

To conclude, results of this study largely support the relevance of IT in the control of the reliability of data. As argued by Sajady et al. more effective internal and external control can be exerted when IT is adopted, since it allows managers greater access and control of both financial and non-financial information (Dillon 1999).

The findings of this study should be of interest to national and international practitioners and standard setters, since it increases the awareness and the relevance for firms of having proper AIS able to satisfy different stakeholders' needs. Firms can benefit from the present study in several ways: it can support managers in increasing the awareness of having proper AIS. Firms may also benefit from the study in defining a new managerial profile able to manage information flows among different functions and departments in the firm. Furthermore, it can support managers in choosing the level of integration of the accounting system, taking into account the possibility of exploiting endogenous factors to increase the level of convergence between financial accounting information and management accounting information.

Within this framework, future research may be helpful in order to extend the knowledge with regard to the support of IT in the corporate reporting process and in the assurance of the reliability of financial and non-financial information. In doing so, some research questions arise:

- Do firms need to hire some new skills or to develop training courses in the area of IT?;
- Do standard setters or national/international accounting association need to develop new standards or rules to help firms in using IT system for the NFI creation process?;
- How policy makers can help firms in supporting the process of IT assurance of NFI?

Finally, the present work lays the groundwork for new frontiers of research. Indeed, this research is not without limitations. First of all the research is carried out on three case studies in the Italian context, therefore more case studies could be analyzed and more countries could be selected in the future development in order to do comparison among different setting. Second, the method of the interview is based on the perceptions of interviewees; therefore, caution needs to be used to generalize results to other companies, which belong to different setting and different industrial sector. Furthermore, it could be interesting to extend the context of this analysis to other top managers in order to understand the diversity of perceptions among different cultures and different managerial roles.

References

- Alagic, A., Turulja, L., Bajgoric, N.: IT audit quality factors identification in the function of business continuity: a systematic, 9th International Conference of the School of Economics and Business, p. 1. University of Sarajevo, School of Economics and Business Trg oslobođenja ... (2018)
- Anderson, R.H., Regulating corporate annual reports in Australia. *Business and economic history* (1998)
- Barth, M.E., Cahan, S.F., Chen, L., Venter, E.R.: The economic consequences associated with integrated report quality: capital market and real effects. *Account., Organ. Soc., Elsevier* **62**(2017), 43–64 (2017)
- Bozzolan, S., Favotto, F., Ricceri, F.: Italian annual intellectual capital disclosure: an empirical analysis. *J. Intellect. Cap., MCB Ltd* **4**(4), 543–558 (2003)
- Brazel, J.F., Dang, L.: The effect of ERP system implementations on the management of earnings and earnings release dates. *J. Inf. Syst.* **22**(2), 1–21 (2008)
- Breton, G., Taffler, R.J.: Accounting information and analyst stock recommendation decisions: a content analysis approach. *Account. Bus. Res., Taylor & Francis* **31**(2), 91–101 (2001)
- Broadbent, M., Weill, P., St. Clair, D. The implications of information technology infrastructure for business process redesign. *MIS Quarterly*, pp. 159–182. JSTOR (1999)
- Brown-Liburd, H., Zamora, V.L.: “The role of corporate social responsibility (CSR) assurance in investors’ judgments when managerial pay is explicitly tied to CSR performance”. *Audit.: J. Pract. & Theory Am. Account. Association* **34**(1), 75–96 (2015)
- Caglio, A.: Enterprise resource planning systems and accountants: towards hybridization? *Eur. Account. Rev., Taylor & Francis* **12**(1), 123–153 (2003)
- Caglio, A., Melloni, G., Perego, P.: Informational content and assurance of textual disclosures: evidence on integrated reporting. *Eur. Account. Rev., Taylor & Francis* **29**(1), 55–83 (2020)
- Calvasina, R., Calvasina, E., Ramaswamy, M., Calvasina, G., Cedar City, U.T.: Data quality problems in responsibility accounting. *Issues Inf. Syst. X* **2**, 48–57 (2009)
- Caserio, C. Relationships between ERP and business intelligence: an empirical research on two different upgrade approaches, *Information Technology and Innovation Trends in Organizations*, pp. 363–370. Springer (2011)
- Chapman, C.S., Kihn, L.-A.: Information system integration, enabling control and performance. *Account., Organ. Soc., Elsevier* **34**(2), 151–169 (2009)
- Cohen, J.R., Simnett, R.: “CSR and assurance services: A research agenda.” *Audit.: J. Pract. & Theory, American Accounting Association* **34**(1), 59–74 (2015)
- Curtis, M.B., Jenkins, J.G., Bedard, J.C., Deis, D.R.: Auditors’ training and proficiency in information systems: a research synthesis. *J. Inf. Syst.* **23**(1), 79–96 (2009)
- Daneila, M., Vassen, E.H.J., Dameri, R.P.: *Accounting information system for decision making*. Springer-Verlag, Berlin (2013)
- Davenport, T.H. Putting the enterprise into the enterprise system, vol. 76, no. 4, *Harvard Business Review* (1998)
- Dhaliwal, D.S., Li, O.Z., Tsang, A., Yang, Y.G.: Voluntary nonfinancial disclosure and the cost of equity capital: the initiation of corporate social responsibility reporting. *Account. Rev.* **86**(1), 59–100 (2011)
- Dillon, C. Stretching toward enterprise flexibility with ERP, APICS-the performance advantage (1999)
- Doni, F., Martini, S.B., Corvino, A., Mazzoni, M.: Voluntary versus mandatory non-financial disclosure: EU Directive 95/2014 and sustainability reporting practices based on empirical evidence from Italy. Emerald Publishing Limited, Meditari Accountancy Research (2019)
- Dzurainin, A.C., Mălăescu, I.: The current state and future direction of IT audit: challenges and opportunities. *J. Inf. Syst., American Accounting Association* **30**(1), 7–20 (2016)
- Ergüden, A.E., Kaya, C.T., Sayar, A.R.Z.: Integrated assurance for non-financial reporting. *Int. J. Econ., Commer. Manag.* **1**, 72–81 (2017)

- Fischer, G. (2012) Context-aware systems: the 'right' information, at the 'right' time, in the 'right' place, in the 'right' way, to the 'right' person. Proceedings of the International Working Conference on Advanced Visual Interfaces, pp. 287–294
- Fisher, E.S., Shortell, S.M., Savitz, L.A.: Implementation science: a potential catalyst for delivery system reform. *Jama, American Medical Association* **315**(4), 339–340 (2016)
- Florescu, V. TIC et performance de l'entreprise: un modèle général d'analyse, *Revue Repères Economique et Informatiques*, No. 2 (2007)
- Gattiker, T.F., Goodhue, D.L. What happens after ERP implementation: understanding the impact of interdependence and differentiation on plant-level outcomes", *MIS Quarterly*, pp. 559–585. JSTOR (2005)
- Granlund, M., Malmi, T.: Moderate impact of ERPS on management accounting: a lag or permanent outcome? *Manag. Account. Res., Elsevier* **13**(3), 299–321 (2002)
- Hannan, R.L., Rankin, F.W., Towry, K.L.: The effect of information systems on honesty in managerial reporting: a behavioral perspective. *Contemp. Account. Res., Wiley Online Library* **23**(4), 885–918 (2006)
- Healy, P.M., Palepu, K.G.: Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature. *J. Account. Econ.* **31**(1), 405–440 (2001)
- Hopwood, A.G.: Accounting and the environment. *Acc. Organ. Soc.* **34**(3), 433–439 (2009)
- Hummel, K., Mittelbach-Hoermanseder, S., Cho, C.H., Matten, D. Corporate social responsibility disclosure: a topic-based approach. Available at SSRN 3090976 (2020)
- Innes, J., Mitchell, F.: The process of change in management accounting: some field study evidence. *Manag. Account. Res., Elsevier* **1**(1), 3–19 (1990)
- Karim, J., Somers, T.M., Bhattacharjee, A.: The impact of ERP implementation on business process outcomes: a factor-based study. *J. Manag. Inf. Syst., Taylor & Francis* **24**(1), 101–134 (2007)
- Klamm, B.K., Watson, M.W.: SOX 404 reported internal control weaknesses: a test of COSO framework components and information technology. *J. Inf. Syst.* **23**(2), 1–23 (2009)
- Lukka, K.: Management accounting change and stability: loosely coupled rules and routines in action. *Manag. Account. Res., Elsevier* **18**(1), 76–101 (2007)
- Madnick, S.E., Wang, R.Y., Lee, Y.W., Zhu, H.: Overview and framework for data and information quality research. *J. Data Inf. Qual. (JDIQ) ACM New York, NY, USA* **1**(1), 1–22 (2009)
- Markus, M.L., Axline, S., Petrie, D., Tanis, S.C.: Learning from adopters' experiences with ERP: problems encountered and success achieved. *J. Inf. Technol., Taylor & Francis* **15**(4), 245–265 (2000)
- Merkl-Davies, D.M., Brennan, N.N.: Discretionary disclosure strategies in corporate narratives: incremental information or impression management? *J. Account. Lit.* **26**, 116–196 (2007)
- Moeller, R.R. IT audit, control, and security, vol. 13. John Wiley & Sons (2010)
- Nicolaou, A.I.: Firm performance effects in relation to the implementation and use of enterprise resource planning systems. *J. Inf. Syst.* **18**(2), 79–105 (2004)
- Pflugrath, G., Roebuck, P., Simnett, R.: Impact of assurance and assurer's professional affiliation on financial analysts' assessment of credibility of corporate social responsibility information. *Audit.: J. Pract. & Theory, American Accounting Association* **30**(3), 239–254 (2011)
- Poston, R., Grabski, S.: Financial impacts of enterprise resource planning implementations. *Int. J. Account. Inf. Sys-Tems, Elsevier* **2**(4), 271–294 (2001)
- Rogers, R.K., Grant, J.: Content analysis of information cited in reports of sell-side financial analysts. *J. Financ. Statement Anal.* **3**, 17–31 (1997)
- Rose, J., Kræmmergaard, P.: ERP systems and technological discourse shift: managing the implementation journey. *Int. J. Account. Inf. Syst., Elsevier* **7**(3), 217–237 (2006)
- Skibniewski, M.J., Ghosh, S.: Determination of key performance indicators with enterprise resource planning systems in engineering construction firms. *J. Constr. Eng. Manag.-Ment, American Society of Civil Engineers* **135**(10), 965–978 (2009)
- Stoel, M.D., Havelka, D.: Information technology audit quality: an investigation of the impact of individual and organizational factors. *J. Inf. Syst., American Accounting Association* **35**(1), 135–154 (2021)

- Taipaleenmäki, J., Ikäheimo, S.: On the convergence of management accounting and financial accounting—the role of information technology in accounting change. *Int. J. Account. Inf. Systems*, Elsevier **14**(4), 321–348 (2013)
- Teru, S.P., Idoku, I., Ndeyati, J.T.: A review of the impact of accounting information system for effective internal control on firm performance. *Indian J. Financ. Bank.* **1**(2), 52–59 (2017)
- Toth, Z.: The current role of accounting information systems. *Theory, Methodol., Pract., Univ. Miskolc* **8**(1), 91 (2012)
- Trucco, S.: *Financial accounting*. Springer (2015)
- Trucco, S., Corsi, K. The influence of ERP systems implementation on accounting, organizational and social improvements: evidence from Italy and the UK. *Information systems, management, organization and control*, pp. 115–138. Springer (2014)
- Vasile, G., Mirela, O. Data quality in business intelligence applications, p. 1359. *ANALELE UNIVERSITĂȚII DIN ORADEA* (2008)
- Weidenmier, M.L., Ramamoorti, S.: Research opportunities in information technology and internal auditing. *J. Inf. Syst.* **20**(1), 205–219 (2006)
- Xu, H.: Data quality issues for accounting information systems' implementation: Systems, stakeholders, and organizational factors. *J. Technol. Res., Academic and Business Research Institute (AABRI)* **1**, 1 (2009)
- Yin, R.K., Moore, G.B.: Lessons on the utilization of research from nine case experiences in the natural hazards field. *Knowl. Soc., Springer* **1**(3), 25–44 (1988)