

# Accounting history in a digital age: Empirical experiences, improving methods and unlocking new research avenues

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## Abstract

Technology has increasingly opened new avenues and methods in accounting and other business research. Accounting history research is not immune to technological developments, and we propose that increased digitalisation offers opportunities to enhance the appeal and relevance of such research, both within the accounting history realm itself and beyond. After setting out a clear definition of digitalisation, we reflect on what accounting history is as represented in the literature and then present empirical insights from two research settings – a religious organisation and a brewery – to provide a representation of what digitalisation means in terms of ‘doing’ accounting history research. The article also reflects on how a digital world can open new research avenues and reduce the risks of scholasticism and sophism.

## Keywords

digitalisation, accounting history, research methods, digitisation

## Introduction

The information technology developments of the past decade or two have presented the accounting discipline with not only challenges (Belfo and Trigo, 2013) but also opportunities (e.g. Bhimani and Wilcocks, 2014; Cockroft and Russell, 2018). These same technologies have been the subject of much research and indeed have changed how some researchers do their work. Bhimani (2020a) captures this very succinctly when he quotes Davis (2017: 2) who suggests that data and technologies today can lead us to ask ‘questions we didn’t even know we had’.

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Ó hÓgartaigh et al. (2002) noted documents are the historian's raw material. This remains so. However, how accounting historians can access and analyse documents has changed dramatically in the 20 years since Ó hÓgartaigh et al. (2002). There have also been several interesting articles during this timeframe that have raised questions about what accounting history is and how/why it matters, for example, Gaffikin (2011), Gomes et al. (2011), Levant and Zimnovitch (2017), McBride and Verma (2021) and McWatters (2017). Such articles provide important food for thought on issues such as what accounting history is, what it could be and what contributions it can make to contemporary research; however, they do not in their objectives address how accounting research may be done in a digital environment. As more and more documents useful to accounting researchers have become digitised over the past decade or more, and technologies have allowed accounting researchers to operate digitally, we propose that the 'doing' of accounting history has changed to such an extent that we can now ask and answer questions we did not even know we had, to paraphrase Bhimani (2020a). In a digital age, to do sound accounting history research, the challenge therefore is to combine technology with the researcher's ability to interpret and argue (Gregory, 2014).

Gaffikin (2011), Gomes et al. (2011) and Previts et al. (1990) are among the accounting historians who have suggested that the accounting history discipline needs to improve its articulation of what accounting history is and how it is/should be done. This article takes this on board and focuses on the 'doing' of accounting history in a digital world. It is thus an article focusing on the practical methods of accounting history but in a digital age. In a digital context, and doing accounting history research in this context, it is important to distinguish *digitisation* from *digitalisation*. While more detail is given in the next section on both, digitisation can be understood as the conversion of something into a digital form, for example, converting a historical paper document to an electronic file; digitalisation is using digital technologies to improve the efficiency of processes and derive more effective outcomes.

Drawing on the research experiences of the authors, we recount empirical cases of doing accounting history from digitised records and as a digitalised process with the aim of encouraging more digitalisation of accounting history research. These experiences not only resulted in several academic publications and book chapters but have also highlighted the power of working digitally over more traditional methods. To give a brief example here, the digitalisation of one of the empirical cases highlighted later allowed us to utilise multiple sources to build a rich picture of accounting in a religious institution, as well as enlighten contemporary knowledge. Of course, manual methods could yield the same output in this example, but the digitalisation of this specific project allowed us to organise and manage the data to provide an outcome faster than manual methods. However, it is important to note that, while digitalised methods may increase efficiency in this way, they cannot replace the researcher's own knowledge of the empirical data or the high level of research skills and judgement required to comprehend data and elucidate findings, or indeed the need for the researcher to be reflective in the data analysis process. In essence, the digitalised approach facilitates faster and more systematic analysis and allows additional time for the researcher to ruminate and to be more reflexive with regard to the findings, interpretations and implications, critical components in 'doing' historical research. As such, digitalisation may serve to augment the analysis and interpretation capabilities of the researcher (Gregory, 2014).

As mentioned, this article's focus is on the 'doing' of accounting research digitally. It thus contributes to alleviating, to some extent, epistemological concerns such as scholasticism and sophism raised by Levant and Zimnovitch (2017) around the robustness of accounting history – see later. The use of digital processes at a minimum can provide a more efficient way to triangulate data or tentative facts in accounting history research compared to manual methods. Put simply, it supports the verification of sources and the 'external criticism' of facts, where at least more than one

source of information is used to save the researcher from using false information (Garraghan, 1946). Later, we provide several insights to this effect. A ‘digital doing’ of accounting history research of course does not negate the need for a sound methodology in any particular study. While such concerns are not the main focus here, the digitalisation of accounting history research may also permit the use of theories, concepts and methods not previously within the typical realm of accounting history researchers. More importantly in our view, the ‘digital doing’ of accounting history research may encourage more researchers to utilise primary archival data – according to Spraakman and Quinn (2018), less than half of the studies published in the period 2006–2015 in the three prominent accounting history journals used archival sources. It should be noted however that they did not distinguish digitised and non-digitised archives.

The remainder of this article is structured as follows. The next section presents literature to set out some definitions pertaining to digitalisation, reflect on what accounting history is and examine the potential of digitalisation in historical research. Empirical experiences are then detailed, focusing on the ‘doing’ of accounting research digitally. These experiences are also reflected on to tease out what this may mean for present and future accounting history researchers, considering both pros and cons. Some final thoughts and comments complete the article.

## Concepts and literature

This section fulfils three purposes. First, the distinction between digitisation and digitalisation is made clear. Second, it reflects on accounting history as an academic discipline. These two strands are then brought together to examine the potential of digitalisation for accounting history research.

### *Digitisation v digitalisation*

It is important to distinguish the term digitalisation from digitisation, as both terms are often assumed as understood in published articles (see Bhimani, 2020a) or misused in practice. To give an example from historical research, Hull and Scott (2020) refer to a £1 million ‘digitalization’ initiative of the BT Digital Archive. The term should be ‘digitisation’, as it appears to refer to converting paper records to a digital form. Knudsen (2020: 2) noted that ‘a uniform understanding of the term digitalization is lacking’, and thus it is useful for the purposes of this article, and for business and accounting history research in general, to offer some definitions. In short, to borrow from the title of a research briefing paper by Ross et al. (2017), digitised is not digital. Digitisation is ‘the technical process of converting analogue signals into a digital form’ (Legner et al., 2017: 301), that is, making the data ‘digital’. The data itself is not changed in any way; it is merely encoded in a digital format. Examples of digitisation include scanning paper documents and photographs, saving them in PDF format and creating spreadsheets based on data from paper records. Digitisation may of course lead to more reliable data and some cost/operational efficiencies (Ross et al., 2017). Most accounting history researchers who utilise archival sources (45% as per Spraakman and Quinn, 2018) have likely experienced digitisation through, for example, digitised documents.

In turn, digitalisation is using digital technologies ‘in broader individual, organizational, and societal contexts’ (Legner et al., 2017: 301). It involves transforming processes by leveraging digital technologies, ultimately with the objective of more efficient processes and more effective outcomes. In a research context, digitalisation transforms the way in which researchers gather data (e.g. using databases to search for digitised data) and analyse data (e.g. using self-written

programme code or analytical tools), aiding efficiency and opening up new ways of looking at the data to generate results and outcomes. As noted by Batt et al. (2020: 248) 'today, digital technologies are more and more affecting people's private and professional lives'. Batt et al. (2020) also note the definition of digitalisation as offered by Gartner<sup>1</sup> – 'the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business' – a more business-oriented definition. Knudsen (2020: 2) discusses digital transformation, which may be defined as 'major organisational changes driven by digital technologies and, consequently, profound alterations in strategy and the conduct of business', echoing the Gartner definition of digitalisation. According to Knudsen (2020), digitalisation should be understood as being somewhere between digitisation and digital transformation. It is thus more than a technical conversion process (digitisation), but it is not always a profound change in how business is done (digital transformation).

Building on Knudsen (2020), for an accounting historian digitalisation is or should be broader than digital access to archival material (digitisation). Bhimani and Wilcocks (2014: 469) noted how 'digitisation, software and processing power and the accompanying data explosion create significant alterations, dilemmas and possibilities for enterprises and their finance function'. As mentioned earlier, Bhimani (2020a) took this a step further, suggesting that researchers may now, through digital technologies, find answers to questions they did not know they had. Put another way, digitalisation can change how research is done. While the work of Bhimani and colleagues has a focus on management accounting, we propose the arguments they put forward equally apply to accounting history. As will be revealed later in this article, the digitalisation of accounting history research has allowed the present researchers to conduct useful research in novel ways, even in the midst of a global pandemic.

### *Reflections on accounting history*

Accounting historians have provided reflections on what accounting history research is, what its purpose is and how it should be done. A brief synopsis of what constitutes accounting history research as understood for this article is now given. What follows is by no means intended as extensive, as such a discussion is beyond the scope and objective of this article.

As a starting point for determining what accounting history is, Gaffikin (2011: 237) reminds us of the need to consider historiography, as 'responsible researchers need to know on what basis they can make their claims to valid knowledge'. Gaffikin (2011) notes the need for accounting history researchers to consider the broader implications of their research, which is likely a reflection of 'traditional' accounting history's tendency to be (in some cases) a historical narrative. As highlighted by Napier (2020), 'accounting is shaped by its environment but also feeds back into shaping the world in which it operates'. Thus, 'new' accounting history research tends to not only make efforts to contribute to our understanding of accounting in a historical sense but also use history to enlighten contemporary issues of interest (Levant and Zimnovitch, 2017), with particular focus on 'social, political and economic' issues 'within different organisations and placing accounting within its wider context' (McBride and Verma, 2021: 4). In the management history literature, Rowlinson and Hassard (2014) highlight this with reference to institutionalism. They suggest that historical research may be used to advance neo-institutionalist theory and/or institutional theory can be used to illuminate historiography. The accounting history literature has done both relative to institutional theory (e.g. Quinn, 2014; Quinn and Jackson, 2014) and also provides examples relative to other theoretical approaches (e.g. Moreno et al., 2019). Thus, it is reasonable to state that much accounting history research today tends to have 'both intellectually stimulating and

interesting studies, bringing numerous new insights into previously debated topics, as well as melding theory with convincing evidence' (Gaffikin, 2011: 247). This is supported by Carnegie (2014: 1242), who notes that 'an array of theoretical perspectives' is now used by accounting history researchers. Levant and Zimnovitch (2017) also suggest broader comparative studies (e.g. Carmona, 2004; Napier, 2001) and interdisciplinary research (Carnegie, 2014) as being useful in providing greater understanding.

However, Levant and Zimnovitch (2017) highlight risks for the future of accounting history research. First, they note that accounting history research may be at risk of scholasticism – specialised, introspective and removed from contemporary issues. Second, they posit that while they have no evidence of sophism – arguments that appear to be correct but are actually invalid – in accounting history, it also poses a risk. The extant literature also includes several reviews of accounting history research published in the main accounting history journals and some contemporary journals (e.g. Baños Sánchez-Matamoros and Gutiérrez-Hidalgo, 2010; Bisman, 2011; Carnegie and Potter, 2000; Cinquini et al., 2008; Spraakman and Quinn, 2018). Such reviews illustrate a very broad range of research topics. However, of relevance to this article, such reviews have not given much detail on the methods used.

### *The potential of digitalisation in historical research*

Contemporary accounting research on digitalisation tends to focus on how digitalisation affects the work of accountants in a variety of roles and functions, for example, management accounting (Bhimani, 2020b; Cavélius et al., 2020; Endenich, 2022; Quattrone, 2016; Saggi and Jain, 2018); internal audit (Betti and Sarens, 2021; Betti, Sarens and Poncin, 2021); and external audit (Fotoh and Lorentzon, 2021; Hamdam et al., 2022). The consequent implications for the education and development of future practitioners are also examined (McBride and Philippou, 2022). Thus, in a contemporary context, researchers are aware of the potential of digitalisation, and accounting research methods are also adapting in response to digitalisation (e.g. Bhimani, 2020a).

In the contemporary business and accounting literature, one area that has benefited from the use of digitalisation of research is content/text analysis. Quantitative studies using content/text analysis methods typically involve translating the digitised text into quantitative measures and using computer-aided techniques to automate data dictionaries, word counts and so on. This in turn augments the scalability of the analysis. Software such as Linguistic Inquiry and Word Count (LIWC) has been available and validated since the 1990s (e.g. Pennebaker and Francis, 1996; Pennebaker and King, 1999) and can be used for such purposes. Additionally, contemporary programming languages like Python allow researchers to search and analyse text as they see fit. In the past decade or so, text available for analysis has increased in large volumes due to the advent of platforms such as social media. For example, text from the Twitter platform has been used to study many aspects of business including marketing (Jansen et al., 2009), finance (Bollen et al., 2011), supply chain management (Chae, 2015) and socio-political engagement by accounting firms (Lynn et al., 2021; Suddaby et al., 2015). Thus, it is fair to say there is a substantial body of digitalised research in this field. In accounting, the LIWC software has been used in contemporary studies such as Li (2008) and Merkl-Davies et al. (2011). However, content/text analysis has not been widely used in accounting history research. There are some examples of general longitudinal content analysis studies such as that of Guthrie and Parker (1989). Other studies include those on the evolution of the readability of narratives in annual reports (Moreno and Casasola, 2016), the evolution of corporate narratives against the backdrop of institutional factors (Moreno and Quinn, 2020), the evolution of dual conflicting and contradictory public benefit versus private investor commercial

responsibilities (Power and Brennan, 2021) and the evolution of environmental reporting (Quinn et al., 2022). There are also some examples of thematic content analysis using a qualitative research approach which implies a more manual process of ‘careful reading and re-reading in order to extract themes’ (Atkins and McBride, 2022: 1270). Examples include analysis of historical journal narratives of forms of accounting for biodiversity and extinction (Atkins and Maroun, 2020) and of historical roots of social and environmental accounting (Atkins and McBride, 2022).

Spraakman and Quinn (2018) report only 45 per cent of published accounting history articles over their 10-year review period used archival evidence. Their article focuses on classifying extant publications into various topic areas, and although it is useful to understand the proportion of research using archival sources, their work did not classify whether the archives used were digitised or not – which would be useful to give context to the present article. As will be shown later, this article suggests that digitalisation can indeed affect how accounting history research is done and that increased use of digitalisation in accounting history research may augment the ‘doing’ and publication of empirical research, that is, more archival material may be accessible as it is in a digital format and more varied methods of analysis may be applied to generate interesting and useful findings. On the future of accounting history research, Levant and Zimnovitch (2017: 462) assert that it would ‘be interesting to study new types of archives that are more open to interpretation than published works, such as film, photography and literature’ – see also Carnegie and Napier (2017); Gomes et al. (2011) and Parker (2009). Film and photo archives are increasingly digitised and available to the public and studies of such archives may require new research methods, which have been encouraged by, for example, Carnegie (2014). Digitalisation may have a role to play in such studies.

As mentioned above, little accounting history research draws on aspects of digitalisation. This is perhaps not surprising given the historic nature of the research and digitalisation being a more contemporary topic, but as recognised earlier and in the call for papers (articles) for this special issue, digitalisation is affecting all strands of society. The business and management history literature has highlighted how the digital world may affect that field, although as noted by Nix and Decker (2021: 17) ‘the number of historians engaging actively with digital history is still small’. Nix and Decker refer to and distinguish various digital history source data types and provide some insights on what digital sources can do for business history. For example, they mention how digital newspaper archives can be used to garner context of organisations or entrepreneurial figures (see also Bowie, 2019; Tumbe, 2019) or how leveraging digital archives can be used to provide new insights on unexplored sectors, such as the work of Vallejo Pousada and Larrinaga (2022) on the Spanish travel sector.

While more comments are given later, it is clear that digitalisation affects accounting history research beyond the content analysis type studies mentioned above. Such sources are not only becoming more digital but the very fact that they are digitised permits accounting history researchers to use methods not previously possible without considerable manual effort. Arguably too, such research is more accessible to a broader audience and its outputs may contribute more readily to contemporary debates (Murphy and Quinn, 2023) and theory development (Rowlinson and Hassard, 2014). In this vein, the next section offers some experiences of doing digitalised accounting history research, drawing on the work of the present authors.

## **Empirical experiences**

As noted in the introduction, the focus of this article is on the ‘doing’ of accounting history in a digital world. To this end, we now recount experiences of research work, emphasising the ‘doing’ of research in a digitalised manner. Two sets of experiences are chosen, based on the

present authors' research work. These are illustrative experiences and do not claim to be perfect examples of digitalised accounting history research. The first case is that of Guinness, which dates from 2011 to the present and involves some aspects of digitalised accounting research. The second case is that of a Magdalene Laundry. This latter research was fully digitalised, with the authors 'locked down' due to the COVID-19 pandemic. The context of each case is presented, followed by a comment on the digitised/digitalised aspects of each case. Some reflections on what the methods and tools applied might mean for the development and future of accounting history research are given in the subsequent section.

## Guinness

*Research context and sources.* For one of the authors, a trip to the Dublin-based archive of Arthur Guinness and Son Ltd in 2011 was not only a first foray into the world of accounting history but also the beginning of a continuing exploration of rich data sources of the Guinness company. As a company, Guinness had not been subject to much previous research in the accounting history field. At the time, in 2011, the archival catalogue was not available publicly or in any digital form – which has since changed. The only available digitised records at the archive at that time were the annual reports from 1886 to date, which will be described later.

The initial visit in 2011 studied management accounting change in the Guinness Cooperage (see Quinn, 2014) and drew on records about the management of the cooperage and some accounting reports. Similarly, discursive articles followed later, namely (1) Quinn and Jackson (2014) with source records around costing during the First World War and (2) Hiebl et al. (2015) with documentary records from the files of the Chief Accountant (a role equivalent to a modern-day chief financial officer). Additionally, some articles with a quantitative content analysis method emerged, namely Moreno et al. (2019), Moreno and Quinn (2020) and Moreno and Quinn (2022). The outputs of the research on Guinness extend to about 250 published pages – in contemporary and historic journals – and are shared by several authors with one of the present authors being involved throughout. Although the first visit to Guinness was over a decade ago, the use of (digital) technology should not be underestimated and, as will be revealed, its use increased as time passed. Some of this research is now described, with a focus on how it was done digitally.

*Digitisation/digitalisation of research at Guinness.* For the research in the Cooperage (Quinn, 2014), no data was initially available in a digital format. Any archival records found useful were digitised using a high-quality digital camera. Then, after being photographed, text recognition functionality within Adobe Acrobat was used to enable searching of the documents. Most documents were internal-typed memoranda and reports and text recognition worked well. These digitised documents allowed the researcher to work offsite and manually compare, analyse and search for keywords. This in turn made the development of the final article faster and more rigorous as documents could be more readily cross-checked. Two other articles, Quinn and Jackson (2014) and Hiebl et al. (2015) followed the same process. It should be remembered these articles were developed from 2011 to 2014. The digital camera used was high quality for the time but of a lesser quality than a modern smartphone camera. Today, with software such as Microsoft Lens, not only can documents be scanned, but converted to a readable/searchable format automatically and stored in the cloud. These articles are clear examples of using digitised records to help the research process. The process itself did not change *per se* but was made more efficient by the use of digitised data.

After the abovementioned research, the work turned to the annual reports. The Guinness Annual Reports, including accounts, were available to the researchers in a high-quality searchable PDF

format in the Guinness Archive. In other words, they were in digital format and thus could be subjected to a more digitalised research approach such as text analysis. A computerised text analysis method was used in the article by Moreno et al. (2019). It is also an example of the digitalisation of accounting history research, as it drew entirely on the digitised PDF files of the Guinness Annual Report and used the LIWC software. In their article, Moreno et al. (2019) analysed multiple textual characteristics (e.g. positive, negative, future, first-person pronouns) over a period of 49 years (1948–1996) of Chairman's Statements of the Guinness company. They assessed any potential relationship between the textual characteristics and profitability, seeking evidence of impression management. During the entire analysis period, the company was profitable, and the Chairman was a member of the Guinness family in all but the last 10 years. To conduct the analysis, Moreno et al. (2019) extracted the content of the Chairman's Statements from the PDF annual report and converted it to a text file format. The text files were then loaded into the LIWC software to analyse various textual characteristics. To give some examples, for positive references, words related to positive emotions yielded 406 words or word stems; for negative references, 499 words or word stems were found; for future references, 48 words and word stems were noted. Such categories equate to pre-defined LIWC dictionaries, although the study also included one *ad hoc* category, namely external references. Such LIWC dimensions have been used in previous impression management research, however, as noted by Moreno et al. (2019), not in scenarios of continuous profitability. They then used multivariate regression to analyse whether given variables (profitability, risk, size, changes in chairperson and changes in report titles) may have been related to textual characteristics (positive, negative, tentative, future and external references, length, numeric and personal references). In short, the findings showed limited evidence of impression management. As noted by Moreno et al. (2019: 1732), 'to the best of our knowledge, this is the first article to analyse the evolution of multiple textual characteristics in accounting narratives over an extended period of years from an impression management context'. In addition, their study focused on one company rather than poor-performing versus good-performing firms. Taken together, these two characteristics of the work of Moreno et al. (2019) made it somewhat unique for the time. For this article, a key point from the work of Moreno et al. (2019) is that the entire research process was digitalised. While it may be an obvious point to state, textual analysis studies of this type tend to utilise software. In a contemporary setting, the annual reports of companies tend to be available in PDF or a similar readable format, but this is not always the case with historical accounting reports. However, given that many annual reports of larger firms were typically professionally printed, they can be converted to a digital and searchable format – which in the case of Moreno et al. (2019) had already been done by the excellent preservation work of the archive staff.

More recently, Moreno and Quinn (2022) used the annual reports to explore topics normally within the family business literature. Gomez-Mejia et al. (2014) proposed that financial reporting in family business may be driven by certain dimensions of socioemotional wealth (SEW) – mainly 'family control and influence' and 'family identity'. In an initial attempt to empirically test the propositions, Drago et al. (2018) analysed the relationship between these two dimensions and readability. They found mixed results and called for further research, which Moreno and Quinn (2022) attempted to address. Using the Chairman's Statement from 1950–1996, Moreno and Quinn (2022) explored the relationship between the most salient SEW dimension and reporting quality, proxied by readability. They utilised a dataset prepared initially by Cleary et al. (2019), which was a dataset based on what has been termed the FIBER<sup>2</sup> dimensions of SEW (see Berrone et al., 2012). This dataset was compiled manually from the Guinness Chairman's Statement from 1950 to 1972. Moreno and Quinn (2022) extended the dataset to include the years 1973 to 1996. This process involved additional manual coding of paragraphs to determine any dimensions

of SEW. With the additional data coded and captured in a spreadsheet, and the text of the Chairman's Statements extracted to a text file, the research process was then a fully digital one. Thus, this research was partially digitalised. A regression model (using Stata software) was created to analyse the determinants of readability, as captured by the Bog index, a readability index useful for analysing corporate financial disclosures (Bonsall et al., 2017). The 'family identity' (or I) dimension was the dependent variable and control variables as per Moreno et al. (2019) were included. The results of Moreno and Quinn (2022) show that the 'family identity' dimension of SEW was related to financial reporting readability when Guinness was defined as a family firm, but not significant when Guinness ceased to be a family firm. They also noted a point of family legacy (via the 'family identity' dimension) enduring even when a firm ceased to be a family firm – the 'family identity' dimension was significantly and positively related to readability in the period 1950–1985 when under the family control, but it remained so after 1986. Moreno and Quinn (2022) suggest these findings contribute to contemporary understandings of family business, while drawing on historical accounting data.

In summary, contributions such as those made by the articles mentioned above are arguably not possible without the rich and longitudinal data from Guinness which had been digitised. In turn, this facilitated the use of a digitalised research process.

### *A Magdalene Laundry*

*Research context and sources.* The second empirical example relates to work by the same author of the Guinness work referred to above and a second author. The research topic is a religious institution, thus quite different in form to the commercial operations at Guinness. The research specifically focused on a Magdalene Laundry and comprised digitalised research on digitised records.

Towards the end of the twentieth century, significant attention focused on several interconnected, church-run, and state-supported networks of residential institutions in Ireland. These included orphanages, industrial schools, psychiatric hospitals, mother and baby homes and what became known as Magdalene Laundries, the institution of focus here. Many survivors of these institutions highlighted abuses endemic in these systems of 'coercive confinement', and a series of investigations have provided a pervasive understanding of some of the human aspects of these institutions (O'Donnell and O'Sullivan, 2020: 1). Little has been documented about their financial aspects – many had a charitable status. McCarthy (2010: xii) emphasises that many such institutions 'were not legally bound to keep records [...] of their financial transactions'. However, some activities of these institutions involved commercial activities and certain organisations were, therefore, required to account for sales taxes, or value-added tax (VAT), at least post-1972.

The Magdalene Laundries operated from the eighteenth to the late twentieth centuries.<sup>3</sup> Their function was ostensibly to house 'fallen women',<sup>4</sup> who were required to work as part of their board. They operated large commercial laundries, serving a variety of large and small customers in their locality. Our study focuses on one particular Magdalene Laundry situated in Donnybrook, an affluent Dublin suburb.<sup>5</sup> A large multidisciplinary project initiated in early 2020 adopted a multi-faceted approach to the examination of the contemporary significance and heritage of the Donnybrook Magdalene Laundry (hereafter Laundry) with reference to political, cultural, financial, legal, architectural and social contexts (Coen et al., 2023). This project comprised several academics from multiple disciplines and focussed on understanding sustained perspectives and practices over the lifetime of the establishment. The Laundry's activities were operated as part of a larger unincorporated entity – the Religious Sisters of Charity. From 1972, their activities constituted a trade as per the Irish Value Added Tax Act 1972, requiring 'full and true records of all transactions which affect or may affect his liability to tax'. A Report of the Inter-Departmental Committee (IDC) to establish

the facts of State involvement with the Magdalene Laundries suggested that the financial records of the Donnybrook Laundry did not survive and was, therefore, unable to provide any understanding of its financial operations (IDC, 2013). Fortunately, some records did in fact survive and have recently become available. The records passed with the ownership of the laundry buildings and were donated by the current owners to university archives (Murphy and Quinn, 2023).

The available financial records comprise two physical boxes of records and documents. The contents of these boxes largely pertain to the period 1962 to 1987, with some broken periods, as well as some sporadic records into the early 1990s. A content checklist was compiled, and key account books were scanned as PDF files using CamScanner in case the originals became damaged or their return was sought by the developers of the Laundry site. This was done prior to the present author's involvement in the project.<sup>6</sup> These were saved to a shared drive and made available to the authors, that is, key data was digitised. No records resembling financial statements were present. Very detailed cash receipts records for customer monies as well as individual customer records were available and expenditure records provided itemised accounts of spending, describing dates, details and categories of spending monthly, amounts for routine expenditure, and amounts set aside for charitable donations. Value-added tax details – first accounted for in February 1973 in line with the application of the VAT Act 1972 – were also available and recorded on formal documentation issued by the Irish taxation authorities. In addition, customer listings, price lists (detailing different pricing for different customer categories), details of articles laundered on a weekly basis and detailed customer correspondence provided enhanced insights into the Laundry interactions with its customer base. Further documents focused on suppliers, including invoices and other correspondence, allowing a greater understanding of the Laundry interactions with suppliers.

The initial multidisciplinary team had a limited understanding of accounting and finance, and the present authors were invited to join the research team in October 2020. The authors' involvement in the project began during the COVID-19 period, and given the various lockdowns promulgated by the Irish public health authorities, it was not possible for the two authors to meet in person for the entire duration of the research. One of the authors was, however, able to travel to collect the boxes of physical records from the custodian and accepted responsibility for their safekeeping for the duration of the project. This was done on the eve of a highly restrictive lockdown, with the author and the initial custodian meeting wearing medical face masks, on a wet, dark October night to transfer the boxes from one car boot to another. The brief was to provide an understanding of the financial operating model of the Laundry and to assess whether the Laundry may have operated on a 'commercial or highly profitable basis' or whether its model of operation was more akin to a 'subsistence or close to break-even basis' (IDC, 2013: 993).

*Digitisation and digitalisation of research on the Laundry.* An initial assessment of the digitised files highlighted that the key account books were predominantly handwritten, mainly in hardback analysis books, with numerous analysis columns to capture income/expenditure types. The quality of the documents varied, and it was decided that it would not be possible to use text recognition software to search the digitised documents. Therefore, while these digitised documents enabled the authors to work remotely to review and analyse the financial affairs of the Laundry, the records could not be subjected to digitalised research such as the text analysis used by Moreno et al. (2019). Thus, the actual research work comprised a more manual approach than had been envisaged. With the records in the possession of the authors, a detailed examination of the financial records commenced. One author used physical records and the other used the digitised records to gain a robust understanding of some of the core aspects of laundry activity. To ensure both sets of records were the same, a methodical exercise was completed by the author in possession of the physical records to cross-check them to the digitised data and to the pre-prepared listing

of the manual records to ensure all key records had been captured within the digitised files. Additionally, it was noted that the accounts books all had the covers, back and leading pages. All books' pages had a sequence number, and it was thus possible to verify all pages were included. As a result of this exercise, it was concluded that the digitised account books were a full and accurate reflection of the original manual books.

With no financial statements available, a reconstruction of the same was needed to assess the Laundry's financial status. As an unincorporated entity, the laundry (and similarly the religious order) was not required to maintain accounts *per se* and certainly no statutes mandated that financial statements be prepared, audited or presented during the time period of the study. The Laundry did, however, maintain detailed financial records prior to being required to do so under tax legislation. Following another avenue of inquiry, it was determined that laundries were first granted charitable status in 1921 (IDC, 2013: 754) although there were no requirements to file or publish charity financial information during this period. However, the underlying religious order was subject to Canon law, and specifically, the order was required to render an account of its administration to the competent authority (i.e. the Vatican) and to record incomes, expenses and assets (Canon 636, 1983; Canon 1522/1523, 1917). These aspects of Canon law were found by internet searching and are available in a digital format.

While incomplete and with some broken periods, the available records provide detailed documentary evidence and are an important testimony of the financial workings of the Laundry. They enabled a reconstruction of multiple years' income and expenditure, in turn providing a strong understanding of the financial operating model of the Laundry. This reconstruction provided further assurance that the digitised records were a faithful and accurate record of the physical records. The reconstruction involved gathering revenue and expenditure for the available periods using Microsoft Excel spreadsheets. For many who might be familiar with basic accounting workings, the reconstruction followed the principles of an exercise in 'incomplete records'. The Laundry's financial records did not follow the principles of double-entry bookkeeping, but instead adopted a cash basis of preparation. This reflected the probably limited accounting and taxation background of the record keeper(s)<sup>7</sup> and was consistent with that across the religious order more generally (IDC, 2013: 998). By capturing summaries of cash inflows and outflows in a spreadsheet, and comparing the summaries to the digitised VAT returns, it was possible to reconstruct a basic income and expenditure account, showing that a surplus was typically generated. It was also possible to determine how the surplus was used, largely for capital expenditure, donations and remittances to the religious order. During the period under review, the currency in Ireland (Irish pound, IR£) underwent decimalisation – in 1971 – so adjustments were made to amounts on spreadsheets accordingly. Also, as already noted, the VAT Act of 1972 came into force during the period, in advance of Ireland joining the European Economic Union. Although some academic sources suggested that the Magdalenes did not pay taxes,<sup>8</sup> with the digitised VAT Act of 1972 and the digitised records of the Laundry to hand, this was clearly not the case as VAT records were kept and VAT amounts paid. A key point here – possibly not available to previous researchers – is that the digitalisation of the research process implied all documents and sources (such as legislation) could be quickly checked in their digitised format to establish that VAT was and should have been paid.

With a basic income and expenditure account constructed, an effort was made to bring the values to present-day equivalents and to a present-day context. To assess the relative amounts, amounts were indexed to 2020 Euro values in the Consumer Price Index (CPI) as promulgated by the Irish Central Statistics Office (CSO). This CPI data was again available in a digitised format and some useful spreadsheet formulae quickly converted amounts from the 1960s, 1970s and 1980s to a value more understandable to contemporary society. As mentioned earlier, no evidence was found in the archive materials that any financial statements had been prepared. However, it is

likely that some statements may have been prepared on a regular basis to provide a more comprehensive overview of financial aspects to assist decision-making, including pricing decisions,<sup>9</sup> capital investment decisions<sup>10</sup> and donation activity,<sup>11</sup> and to plan for the monetary interactions between the Laundry and the religious order. This reconstruction was instrumental in addressing our brief which was (1) to provide an understanding of the financial operating model of the Laundry, and (2) to assess whether the Laundry may have operated on a profitable basis. The reconstruction highlights that the surplus over the years increased and the amounts remitted to the religious order likewise increased, contributing to the pursuit of its charitable/religious objectives, thereby suggesting its viability to the religious order. The assessment of the viability of the Laundry on a full commercial footing proved more difficult. The reconstructed cost structure was clearly missing a substantial cost, namely staff costs. The available records do not provide any details to ascertain the number of women who worked in the Laundry in a given timeframe. It is thus quite plausible that the surplus generated was in large part due to the lack of labour costs. This suggests that from a purely commercial perspective, the Laundry may not have been viable if all business costs were to be appropriately considered, confirming the perspective that Magdalene Laundries operated on a 'subsistence or close to break-even basis' (IDC, 2013: 993). While the methods of the IDC in preparing a summary of the finance of several laundries are not clearly given, and perhaps cannot be standardised given varying states of conditions of surviving accounting records, the digitalised process here is, we believe, a solid one and provides academic support for the opinion of practitioners on the financial viability of Magdalene Laundries.

In summary, the digitalised process used here, encompassing multiple sources of data and information, allowed the authors to offer well-informed opinions on the finances and viability of the Laundry. While such an opinion could be offered using manual research methods, the digitised account books, combined with digital access to legislation (Civil and Canon law), digital access to price inflation data and the use of spreadsheets proved very efficient and objective.

## **Reflections on what digitalisation can do for accounting history researchers**

The call for papers for this special issue included a call for papers on accounting history research based on methods or methodologies fostered by digital technologies. The two empirical experiences of digitalised accounting history research here highlight not only what research methods such as text analysis can do for accounting history research but also what digitalised methods can do. The experiences are discussed from both a practical and theory development perspective. Some difficulties and issues which may arise, based on our experiences, are also considered.

### *Practical considerations*

Given the focus of this article is to highlight the 'doing' of accounting research in a digital way, we now present some practical considerations for future researchers based on our experiences. We suggest there are three key points to be made about the digitalisation of accounting history research. First, it opens new avenues of research; second, it may allow accounting history research to contribute to more contemporary research issues; third, it can be more efficient than manual methods, allowing researchers to do things that would be very cumbersome manually in a more systematic and efficient manner.

On the first point, Carnegie (2014) encouraged new methodologies in the field of accounting history. As an example, the empirical research on Guinness described earlier has done exactly

that by using a content analysis approach not previously frequently used in accounting history research. This method allowed the researchers to apply a descriptive quantitative methodology. A content analysis method is not easily applied to non-digital data. However, as has been shown, with the digitisation of textual data, quantitative research tools and methods can be more easily applied. Opening up the use of quantitative research also provides an opportunity for broader comparative studies (Carmona, 2004; Napier, 2001) and for interdisciplinary research as suggested by Carnegie (2014).

On the second point, the empirical examples from the Guinness company mentioned above have focused on the analysis of text from annual reports, with the Magdalene case focusing on using multiple digital sources, and we have argued that both have contributed to contemporary knowledge – of impression management in the case of Moreno et al. (2019) and of the finances and viability of a controversial institution in contemporary Irish society from the work on the Magdalenes. There are of course other archival materials available, many of which are digitised and could be useful for future researchers. Researchers such as Carnegie and Napier (2017), Gomes et al. (2011), Levant and Zimnovitch (2017) and Parker (2009) have all noted sources such as film, photography and (non-academic) literature. It is quite likely that a digitalised research approach drawing on such resources can offer interesting, or new, insights for accounting historians.

On the third point, both empirical examples given earlier have utilised software such as spreadsheets and Adobe Acrobat to capture and analyse data efficiently. Additionally, LIWC and Stata were used to perform text analysis and apply statistical methods. While the former tools are effective in digitising data for analysis, the process may be digitalised when combined with other tools and techniques. As shown in the empirical examples, the digitalisation of doing accounting research can also encompass various other data sources or provide context (Bowie, 2019; Tumbe, 2019). Our examples are just that, examples. Once data has been digitised, opportunities are limited only to the digital tools and processes applied to the data (but see below for researcher skills). Some other examples of what can be done are worthy of mention to stimulate the thoughts of future researchers. As a first example, during the Magdalene research project, the researchers were given access to the cash receipts book of a second Laundry. The cash book had been found in an Irish public house (i.e. a bar), and a researcher from the larger Magdalene research project took photographs of all pages of the book on a smartphone – several hundred pages in total – thus digitising them. While the cash book was not used in the empirical example mentioned above, the present researchers engaged a volunteer<sup>12</sup> to make the data more accessible for future researchers. Using text recognition functionality within Google Docs, and some manual inputs to complete and/or correct the extracted text, an Excel spreadsheet of just over 3,800 rows was created. Each row had a name, address and some other data. To bring these relatively static historical items to ‘life’, a formula<sup>13</sup> was used in the spreadsheet to convert the address to a weblink to open the corresponding address on Google Maps – see Appendix for an example. The formula generated usable results about 80 per cent of the time from the address and a present-day street view could be seen. Such data could be useful to give background context to future research (Nix and Decker, 2021), whereby a researcher could for example refer to what type of premises is now at a location. As a second example, one of the authors recently had reason to read *Tratado de Cuentas* or ‘On Accounts’ by Diego del Castillo. This text was published about 500 years ago and is available digitally on Google Play in English (see Mills, 2020). As it is in digital form, it could be used as a data source, reference or even have its text analysed. It could for example be analysed in comparison to Hager’s (1654) *Schatzkammer Italienischen Buchhaltens*, which is available in a printed format at the *Württembergische Landesbibliothek* in Stuttgart, Germany. This latter text could be easily digitised using a tool like Microsoft Lens and analysed relative to *Tratado de Cuentas*.

### *Theory development considerations*

As noted earlier, accounting history researchers should consider the broader implications of their research, such as adding to contemporary understanding and theory (Napier, 2020; Rowlinson and Hassard, 2014). It is unlikely that the 'traditional' historical narrative will disappear, and this is a key element of accounting history and general business history research. We concur with Gaffikin (2011) in that accounting history research does have stimulating and interesting topics and includes studies of organisations that are either still with us and/or are subject to contemporary debate (as in Guinness and Magdalene Laundries) – such studies avoid risks of scholasticism as suggested by Levant and Zimnovitch (2017). However, Gaffikin's (2011) comments were made at a time when the level of digitalisation was not as advanced as today. Technical advances since 2011, in our view and based on the empirical examples given earlier, allow accounting history researchers to delve deeper in search of evidence and provide greater volumes of evidence. As shown by Moreno et al. (2019), for example, the digitalisation of their research on impression management allowed for the consideration of a period of time longer than any previous research, thus adding an incremental contribution to contemporary theory based on what is quite convincing evidence given its duration. Murphy and Quinn (2023) similarly bring new insights to the more broadly debated topic of the role of religious institutions in Irish society in the past. Their insights are more detailed than any previous academic financial investigation of Magdalene Laundries and support prior practitioner analysis. Their use of multiple digital tools and data sources undoubtedly contributed to these insights.

Levant and Zimnovitch (2017) also noted potential sophism in accounting history. We concur with Levant and Zimnovitch (2017) in that we do not believe accounting history researchers have (or would) deliberately built an argument of deceit. However, the very nature of accounting history research can imply accounting researchers are working with limited datasets and/or do not consider broader evidence. The case presented by Murphy and Quinn (2023) provides a clear example of this. While the case could be criticised in that it is 'just one case', their research work used several digital sources – civil legislation, Canon law, digitised books of account, various spreadsheets and general websites (e.g. data from the CSO of Ireland). Taking all such sources into account allowed the researchers to 'triangulate digitally'. To give a concrete example, the researchers noted two previous statements in published academic works on the accounting and taxation requirements of Magdalene laundries were not correct. To be clear, we are not in any way suggesting this equates to sophism. What most likely occurred is that the researchers in question did not have access to data like Murphy and Quinn (2023). More importantly, they did not (or could not) utilise the multitude of digital resources available today, as they were not available at the time, or the research process was not digitalised to the same extent. Thus, for example, Murphy and Quinn (2023) could check the digital version of Canon law for accounting requirements and assess taxation implications by reference to digital versions of Ireland's taxation laws all on one computer screen. Of course, researchers should be familiar with the context of their particular historical research, be it a brewery or religious order, and such sources can be found manually and theory and understanding developed with digital tools or processes. Having said that, we suggest that the digitalisation of accounting history research aids the acquisition of context (see also Bowie, 2019; Nix and Decker, 2021; Tumble, 2019) and knowledge in a more efficient way.

### *Issues with digitalised research*

While the experiences recounted here are largely positive, there are downsides to doing accounting history research digitally. First, as any experienced accounting history researcher knows, access and

availability of historic records can be an issue. While digitising records enables greater access, it brings its own challenges. It may be time-consuming and costly to digitise records (Sanett, 2013). There is also a risk that the records may not be wholly digitised, with missing content not identifiable (Bee, 2008). Ideally, digitisation would be done by archive staff, but when this is not the case, researchers can use tools such as Microsoft Lens to capture and digitise typed documents (Kaur, 2018). Such tools are quite efficient at reading typefaces and converting to a relatively error-free digital format such as a PDF. Hand-written documents can be more problematic, although similar software does make reasonable efforts to interpret handwriting. Once records have been digitised, an initial hurdle is overcome.

However, the verification of digitised sources to original documents becomes more challenging. In a world where everyone is interconnected, and where everyone can publish, broadcast or otherwise share and disseminate archives, it may be difficult to substantiate the ‘truth’ of these archives (Duranti, 2018). The researcher must remain cognisant that it may be relatively easy to make accidental/intentional changes to digital content in comparison to traditional archives, which may affect the authenticity and integrity of the content, and which may not be readily identifiable (Gracy and Kahn, 2012). Further issues, such as the completeness of a digital archive, the integrity of the media on which the data is managed, identification of the ‘rights holder’ and the management of legal access to digital content need to be considered (Gracy and Kahn, 2012). In addition, as technology innovates, it may become more difficult to reliably access content captured on older platforms and such technological obsolescence may be regarded as a significant threat to digital material over the longer term (Hedstrom, 1997). Concerns around the integrity of digital storage media are thus heightened when compared to traditional archival storage (Gladney, 2009). A series of proactive interventions to preserve an archive at increasing frequencies may be required in order to ensure reliable and continued access to authentic digital objects (Conway, 2010).

A second issue is the skills and abilities of the researcher(s). From a technical skills perspective, while some software and methods described in this article are ‘off-the-shelf’ and usable by most researchers, some tools require more skill. For example, text analysis-based research like that of Moreno et al. (2019) can also utilise powerful programming languages like Python to undertake a more customised analysis. Learning to write code in languages such as Python takes time, but it may be worthwhile. A recent example involving the use of Python in a historical study can be found in the work of Quinn et al. (2022), who used Python coding to support a manual analysis of historic environmental reports. Additionally, as noted by Quinn et al. (2022: 20) ‘there is a risk of a historicism in that contemporary methods and concepts are applied to historical data’. Here, the contemporary method is the digitalisation of the research process. The innate skills of accounting history researchers remain very important in that they should continue to interpret and question the outputs of digitally performed research in the same way as with manual methods. Fostering such skills should ensure a continued contribution to our understanding of accounting history as more digitised sources allow us to do more digitalised research.

## Final comments

It is hoped the empirical experiences recounted here provide some useful insights into how digitisation and digitalisation of accounting history research offer advantages to accounting history scholars. Not only can methods such as those described here improve accounting history research in general, we argue, but also open avenues for historical research to contribute to contemporary studies and theories (Rowlinson and Hassard, 2014). We strongly encourage accounting history researchers to embrace digitalisation and pursue more research studies drawing on longitudinal

historical accounting data. There are undoubtedly many organisational and national/local archives with untouched accounting records. Working with such records is easier with digitalisation, and we hope more (and new) accounting history researchers will be motivated by the experiences recounted in this article. As noted by Walker (2016: 44) 'historians [are] assigned a key role in exploring the interaction of accounting and society'. We suggest digitalisation of accounting research can support this role in a substantial way.


The commentary and arguments here are of course limited by the fact that the article comprises the experiences of just two empirical cases. However, we hope we have shown the potential of digital technologies and digitalisation to open new avenues of research and contribute to contemporary debate. A key message of the article is to hopefully encourage accounting history researchers to think digital. Tools and techniques like those described here are available to us and arguably a key limitation is our own ability to learn about and use them. A limitation of course is that not all historical records are available in a digital format, as mentioned. Some old handwritten records may not be amenable to automatic recognition of characters by software, but technology is constantly improving. Indeed, as noted above, researchers have technology freely available, even on their smartphones, to scan and recognise typed text. Thus, as accounting history researchers, we now arguably also have a conservation role.

To sum up, we hope the experiences recounted here help accounting researchers to think about, develop and use methods to exploit increasingly available digital sources. While reading and analysis are key parts of the work of an accounting historian, digital technologies can assist, even though this may present challenges. The words of Gregory (2014: 1) seem appropriate to finish: 'the combination of the computer's ability to manipulate and summarize large volumes of material and the human brain's ability to interpret this appropriately will provide major advances in our understanding of the past'.

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## Notes

1. See <https://www.gartner.com/it-glossary/digitalization>.
2. This is an acronym for family control and influence, family members' identification with the firm, binding social ties, emotional attachment and renewal of family bonds to the firm through dynastic succession.
3. The first Magdalene Laundry in Ireland was a protestant asylum established in 1765 (IDC, 2013: 15).
4. The term 'fallen women' implied: female sexual promiscuity, young women who became pregnant outside of marriage, or young girls and teenagers who did not have familial support.
5. The Donnybrook Magdalene Laundry was established as the St. Mary Magdalene Asylum in 1837. It was sold by the Religious Sisters of Charity in 1992 and traded as a commercial laundry until 2006.
6. A more thorough examination of the physical boxes highlighted limited further information, including chequebook and bank lodgement stubs, and some miscellaneous correspondence. Some of the documents are available at <http://jfmresearch.com/donnybrookarchive/>.
7. The record keeper was likely one of the sisters of the religious order.
8. The orders of course should have paid employer taxes where the women at the Laundries were treated as employees.

9. Surviving records show that pricing decisions were indeed made at the Laundry. The records highlight different prices for different items as might be expected. Different prices were set for different laundry items. For example, sheets, pillowcases, different size towels and different clothing garments; different customers (large v small), likely based on volume of activities; or for different categories of business, an example being a very detailed pricing document for one hospital which catered for adults and children, public and private patients and staff residences.
10. The Laundry regularly invested in the ongoing maintenance and renewal of equipment and buildings.
11. The Laundry made several donations to a variety of recipients during the period reviewed, ranging from IR £100–9,500 in the available records. It is likely that some key decisions were made regarding the affordability of these donations and the intended recipients.
12. The volunteer was Josephina Quinn, a transition year student at Drogheda Grammar School, Ireland.
13. The formula used was as follows: =HYPERLINK("https://www.google.ie/maps/place/"&cell&"",+place') where cell is the cell reference of the first line of the address and place is the town where the laundry was located – Limerick county in this instance.

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## Appendix

Example of the use of Microsoft Excel and Google Maps to visualise historic address records.

Excerpt from spreadsheet

Name	Address Line 1	Address Line 2
Mr. C. (name hidden)	58 O'Connell St.	

The data in Address Line 1 above is contained in cell C9; hence, the formula used is:  
 =HYPERLINK('https://www.google.ie/maps/place/"&C9&"',+Limerick')

The '+Limerick assumes the address is in the city or county of Limerick. Thus, the formula is not 100 per cent accurate and is dependent on the data available.

This formula results in a hyperlink as follows:

[https://www.google.ie/maps/place/58 O'Connell St.,+Limerick](https://www.google.ie/maps/place/58+O'Connell+St.,+Limerick)

Copying and pasting the above formula to all 3,800 rows in the spreadsheet takes mere seconds.

Clicking on this link yields the following image and location on Google Maps as of September 2023. As can be seen, what was likely a household in the 1950s is now commercial premises.

