



A new paradigm of Luca Pacioli's bookkeeping on blockchain phenomenon

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Received: 20 June 2022

Revised: 15 August 2022,

27 October 2022,

22 November 2022,

19 December 2022

Accepted: 28 December
2022

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DOI:

[http://dx.doi.org/10.17977/
um004v10i12023p052](http://dx.doi.org/10.17977/um004v10i12023p052)

Abstract

The objective of this study is to examine the double and triple entry bookkeeping related to blockchain technology bookkeeping. The data we obtained for 30 articles from the database we searched for were provided by major publishers (Elsevier (www.sciencedirect.com), Emerald (www.emeraldinsight.com), Springer (www.springerlink.com), and Wiley (www.wiley.com)) and by service libraries (Complete Business Resources and Web of Science). We show the thoughts of philosopher Foucault regarding the power of knowledge, which will be associated with the phenomenon of the triple-entry and double-entry bookkeeping system paradigms. In addition, we document the blockchain technology has changed the paradigms of both bookkeeping systems. The novelty in this article is the implementation of the philosopher Foucault's thought in the paradigm of the triple-entry and double-entry bookkeeping systems. Our study contributes to expanding the existing literature by providing some arguments and findings regarding the blockchain bookkeeping systems and the future research agenda.

Keywords: Triple-entry; Double-entry; Bookkeeping; Foucault Paradigm; Accounting Philosophy

Abstrak

Tujuan dari penelitian ini adalah untuk mengkaji pembukuan *double* dan *triple-entry* yang terkait dengan pembukuan teknologi blockchain. Data yang kami peroleh adalah 30 artikel dari database penerbit besar (Elsevier (www.sciencedirect.com), Emerald (www.emeraldinsight.com), Springer (www.springerlink.com), dan Wiley (www.wiley.com)) dan dari perpustakaan layanan (Sumber Daya Bisnis Lengkap dan Web of Science). Kami tunjukkan pemikiran filsuf Foucault mengenai kekuatan pengetahuan, yang akan dikaitkan dengan fenomena paradigma sistem pembukuan *triple-entry* dan *double-entry*. Selain itu, kami mendokumentasikan teknologi blockchain telah mengubah paradigma kedua sistem pembukuan tersebut. Kebaruan dalam artikel ini adalah implementasi pemikiran filsuf Foucault dalam paradigma sistem pembukuan *triple-entry* dan *double-entry*. Studi kami berkontribusi untuk memperluas literatur yang ada dengan memberikan beberapa argumen dan temuan mengenai sistem pembukuan blockchain dan agenda penelitian di masa depan.

Kata Kunci: *Triple-entry*; *Double-entry*; Pembukuan; Paradigma Foucault; Filsafat Akuntansi

INTRODUCTION

Blockchain is a future accounting technology that influence to the bookkeeping system. It was concerned with transferring ownership of assets and maintaining an accurate ledger of financial information. The accounting profession is broadly concerned with the

measurement and communication of financials and its information analysis (Houghton, 2016; Libby, 2017; Kuznetsov, 2019; Faccia, Moşteanu & Leonardo, 2020; Chowdhury, 2021). At the beginning of its developing, the single-entry bookkeeping system became the powerful tools among the public accounting firm because the simple transaction activities (Platonova, 2016; Deloitte, 2016; Faccia & Mosco, 2019). However, increasingly complicated economic events have limited to use single-entry, as the result of the emergence of a double-entry bookkeeping system. This bookkeeping system provides accurate data and a more flexible set of transactions. Therefore, most experts explain that a single entry are lost from the expectations of users of information (Pacioli, 1494; Houghton, 2016; Ibanez et al., 2020).

Finally, a number of scientist argue that regarding whether economic transactions will be classified into debits and credits instead of the left and right sides following past experiences is still not conclusion. First, the researcher mentions that the left and proper practice of adjusting economic transactions can result in biased information. Second, some economists are still undecided whether the left and right of the single-entry concept are reliable when providing information to users, so they suggest that debit and credit are more practiced than left and right. (Melse, 2010; Ibañez et al., 2020).

Many scientists favour the growing argument regarding whether the terms debit and credit provide unbiased information to users of financial information instead of the left and right sides (Pacioli, 1494; Houghton, 2016; Ibanez et al., 2020). Therefore, some theories suggest that debits and credits provide reliable information if the information is equated with the unusualness of the resulting information (Hijfte, 2020). On the other hand, debit and credit are still not showing whether the implementation for information that mainly adopts blockchain technology is still reliable. Thus, the theory agrees that debits and credits provide reliable information amid blockchain technology because they classify information accurately (Houghton, 2016).

The differences in how economic transactions should be classified according to the terms (between double and triple entry bookkeeping systems) raise a new problem where there is an attempt to convince the new knowledge brought by double-entry. At the same time, double-entry attempts to persuade most economists to organize information away from bias by simplifying the terms debit and credit (Libby, 2017; Kuznetsov, 2019). However, contrary to the existing concept, the terms left and right of the bookkeeping system is not very valid and reliable. Thus, the two existing theories bring opportunities to open ideas from Foucault regarding power and knowledge.

At the last but not least, it also has to do with whether blockchain should provide a new impact on the existing bookkeeping system. Foucault's famous scientific paradigm is the power of knowledge (Sullivan & Benke, 1997). The power of knowledge will give birth to an understanding of the knowledge event that is a debate from a scientific discipline. The knowledge that can be explored based on the perspective of Foucault's thinking in the blockchain field is the relaxation of knowledge that causes the shaky roots of understanding that have been the centre of attention for the development of the accounting discipline (Houghton, 2016; Libby, 2017; Kuznetsov, 2019).

Foucault's view of the phenomenon of blockchain technology, namely that the application of technology in economic transactions involving many algorithms, is not something that stands alone. Foucault's thought is related to the discontinuity of values that have occurred previously so that a current phenomenon is an event that updates current events (Syarifuddin, 2018; Walker, 2016). As most accountants understand, the recording system that has become an essential part of an economic transaction is a double and triple entry. The two recording systems indirectly imply that the power over knowledge comes

from the pattern of accounting scholarship (Houghton, 2016; Ibanez *et al.*, 2020). Therefore, Foucault's thoughts and views on the power over knowledge never escape from actual accounting events, such as the blockchain phenomenon that cannot be separated from fast and accurate digital economic events.

On the other hand, the implementation of the recording system introduced by Pacioli in some of the existing literature explains that the recording system had been carried out long before Pacioli implemented and designed a recording system that emphasized traders in the Italian straits (Scmitz & Leoni, 2019). Historical sources state that in the 15th century, traders who stopped at the centre of trading strategies in the Mediterranean Sea had perfected the recording of their merchandise by using the terms debit and credit (Sullivan & Benke, 1997; Needles & Powers, 2012; Spiceland *et al.*, 2010).

However, regarding information about the trading centre in the Mediterranean Sea, not many people who stopped there are known. At that time, Pacioli conducted a simple study of Muslim traders there and, as a result, succeeded in finding the relevance of the idea of a recording system known today as double-entry, but it had been implemented long ago before Pacioli conducted a study on the recording system (Weigandt *et al.*, 2017; Warren *et al.*, 2018; Williams, 2018). Therefore, it is not new that the double-entry recording system is the pure work of Pacioli. However, Pacioli conducted tests and experiments regarding the relevance of the recording system carried out by Muslim traders there to form a complete recording system currently known as double-entry.

A number of literature explaining the dynamics of international accounting includes the widespread double-entry bookkeeping system (Sullivan & Benke, 1997; Needles & Powers, 2012; Spiceland *et al.*, 2010; Libby, 2017; Wild, 2017; Weigandt *et al.*, 2017; Warren *et al.*, 2018; Williams, 2018). Based on various studies and advanced studies of accounting equations state that the analysis of the nature of accounts is a prerequisite that cannot be ignored and becomes a solid unity with economic transactions. The accounting equation introduced by Luca Pacioli is a system of equations that is useful in explaining economic dynamics and preparing financial statements, especially balance sheets and income statements (O'Bryan *et al.*, 2000).

In many cases, Pacioli's framework of bookkeeping conditions may be a worldview that Muslim dealers broadly executed after the 15th century (Zaid, 2000; Scmitz & Leoni, 2019). For example, Zaid (2000) compiled data that Muslim dealers conducted double-entry transactions on commercial trades within the Mediterranean that were exceptionally strong, particularly between the maritime republics of Italy (counting Venice) and Muslim dealers within the Center Eastilding a sustainable business.

After the wonder of the main reasoning, the double-entry bookkeeping framework depicted in Luca Pacioli's book started from the impact of Muslim bookkeeping hones that have been polished and actualized by exchanges in Venice (Zaid, 2000; Scmitz & Leoni, 2019). Subsequently, the creators contend that the usage of the double-entry bookkeeping framework and bookkeeping hypothesis presented by Pacioli is an ancient worldview, and it is conceivable that the worldview experiences debate and alter in conjunction with the tremendous improvement of financial exchanges related to blockchain innovation.

One of the relational words is related to the double-entry worldview accepted by post-modernist rationalists. For example, Foucault states that information is not outright (supreme science) and has to be a nonvalue-free worldview that can be executed in any circumstance (Sumi & Noguchi, 2021). Furthermore, Foucault states that the most prominent source of information is the social marvel and worldview that takes after it (Jaya *et al.*, 2019; Dyer, 2020). This has resulted that the worldview displayed by Pacioli related to the double-entry bookkeeping framework will experience changes and shifts in mindset

and, indeed, the first nature of the framework. In this manner, the author contends that the consideration passed on by Foucault is in line with the current wonder. Furthermore, the presence of blockchain innovation has redesigned Pacioli's evident worldview concerning the bookkeeping framework he presented. Eventually, the robust bookkeeping framework can take after the moving elements of science, specifically the triple-entry bookkeeping framework presented by the rationalist Ijiri in 1982 (O'Bryan et al., 2000).

Another study shows triple-entry is a new paradigm in the concept of bookkeeping economic transactions by including where the source of income and expenses occurs (Yamey, 2005; Groblacher & Mizdrakovic, 2019). In his thesis, Ijiri (1986) describes that the current economic events have exceeded the bookkeeping concept introduced by Pacioli. In the end, the bookkeeping system that refers to blockchain technology is a bookkeeping system composed of various economic events, both natural and virtual economic transactions. In other words, the author argues that triple-entry is a bookkeeping system that can complement real and virtual economic events. This is in line with Foucault's thinking that the knowledge paradigm is the power of thought that exceeds the essential capacity and refers to power over that knowledge (Muddhofir, 2013; Mawardi, 2020).

Foucault's view related to the phenomenon of triple-entry and double-entry is a power over the knowledge that triple-entry is becoming a new paradigm in the system of recording economic transactions involving blockchain technology (Mawardi, 2020; Walker, 2016). Triple-entry becomes the power over the basic knowledge of double-entry patented by scientists as the basis for preparing financial statements. On the other hand, triple-entry explicitly introduces the source of transaction events, whereas double-entry cannot identify it in every recording of economic transactions.

This paper aims to examine various literature on the thoughts of philosopher Foucault regarding the power of knowledge, that will be associated with the phenomenon of the triple-entry and double-entry bookkeeping system paradigms. The blockchain technology has changed the paradigms of both bookkeeping systems. The novelty in this article is the implementation of the philosopher Foucault's thought in the paradigm of the triple-entry and double-entry bookkeeping systems.

Furthermore, Foucault states that knowledge is based on the power of the objectivity of that knowledge. This article is expected to contribute to theory and practice (Walker, 2016; Groblacher & Mizdrakovic, 2019; Minamoto & Tsuchiya, 2019). In the theory of blockchain, this paper contributes to adding the literature about triple-entry bookkeeping systems still rarely widely discussed in accounting philosophy research literature. Furthermore, this paper contributes to realizing a bookkeeping system that adopts blockchain technology in the future. Of course, the discussion is on the aspect of scientific architectural philosophy.

This paper is divided into four sections. The first section discussed the background and problems that underlie this writing. Section two discussed Triple-entry Bookkeeping as a juxtaposition of double-entry bookkeeping and the existence of blockchain technology and an explanation of philosopher Foucault's view of triple-entry and double-entry of blockchain technology phenomenon. Section three discussed in-depth and comprehensively the author's thinking related to the new path of the bookkeeping system and explained the existence of a double-entry bookkeeping system that is less implementable in transactions involving blockchain technology. Section four explains the conclusions discussed regarding the review of the philosophy of knowledge power over the phenomenon of double-entry bookkeeping systems that undergo a paradigm shift into a triple-entry bookkeeping system as the concept popularized by Ijiri. The last section is the conclusion, limitation, and future research agenda.

Lack of Aspect in New Paradigm of Bookkeeping on Blockchain Technology

Blockchain can be described as a chronological record of block transactions according to the nature of the transactions. One of the technologies used in the blockchain is cryptography used to ensure the security of transactions based on the digital signature chain (Chwdury et al., 2020). Each block is a group of transactions added to the last block by reaching a consensus on its authenticity among users. This block is then passed to each network user to update the pre-existing database (Coyne & McMickle, 2017; Lee et al., 2021; Chowdhury, 2021). The blockchain system records all transactions ever made, shared through a consensus distributed among each user of that transaction, and it is challenging to determine consensus. This record is due to the algorithm that accompanies the transaction that is not detected by other systems.

Coyne and McMickle (2017) studied the possibility of blockchain accounting in current business transactions. There are two types of blockchain transactions that affect the recording system in accounting today. Both types of transactions are blockchains that are conducted globally and privately. It was mentioned that recording transactions in the work of accountants on the blockchain are inappropriate due to the lack of credibility and accuracy of the transaction data. Concepts that exist on public or private blockchains cannot remove inappropriate accounting concepts on the blockchain. Giant corporations cannot use public blockchains because they do not want to provide their information to the public. In addition, on public blockchains, no authority regulates a person to read or verify records on the blockchain (Lee et al., 2021).

Meanwhile, the use of private blockchain causes investors or external parties to be unable to participate directly in this network. As a result, company data cannot be published outside the company. Based on Coyne and McMickle (2017), determining ledger entries requires extensive accounting knowledge, which investors do not have. Accountants will be able to know the controls needed to prevent profit management, accounting errors, and fraud. Therefore, blockchain will not eliminate that need.

Blockchain technology has changed the nature and type of economic transactions to digitize with the various forms of algorithms that accompany such transactions. The transactions are then translated into an economical language to be recorded in the bookkeeping of economic transactions, currently known as double-entry (Lee et al., 2021). However, in reality, transactions involving blockchain are rarely recorded intact in the accounting of economic transactions. This block is because various programming languages are complicated to translate into accounting languages, so economic transactions cannot be carried out (Chwdury et al., 2020). Therefore, a recording mechanism is needed to accommodate the blockchain technology recording system so that recording transactions can be done appropriately. In other words, the recording system used today does not adequately accommodate the public interest in conducting blockchain technology-based economic activity.

The Downside of Double-Entry Bookkeeping

Double-entry, as it is called, introduced accounting practices for debit and credit. The debit side states that the transaction is generally treated as an increase, and the credit side states that the transaction is treated as a decrease, even though, in fact, the two accounting treatments are the same (Fascia & Mosco, 2019; Perez et al., 2020). Double-entry, introduced by Pacioli, is a bookkeeping system that accommodates the public interest by producing balance sheets and income statements for financial positions.

However, the concept of debit and credit is experiencing several obstacles over the development of the phenomenon of digital transactions, one of which is transactions carried out through blockchain technology. This transaction involves a programming language that is very difficult to detect by ordinary recording systems, so a recording mechanism is needed to explain the phenomenon (Lee et al., 2021; Chwdury et al., 2020; Perez et al., 2020). Thus, the authors argue that the double-entry recording system requires adjustments to various blockchain transactions so that the recording implementation of the programming language can be adjusted.

Ijiri conveyed some other weaknesses in 1986 by answering the existing double-entry system to triple-entry. In his thesis, Ijiri mentioned trebit as a foundation in economic transactions that could not be comprehensively explained by double-entry (see Ijiri, 1986). The concept offered by Ijiri (1986) provides an explanation related to the term momentum. Where the use of the terms "Wealth" and "Income" is no longer relevant to the application of blockchain technology, and this is related to the determination of the point of recognition of various transactions that have occurred (See Ijiri, 1986a, 1989b).

In double-entry bookkeeping systems, for example, weakness occurs because it takes two points in time to recognize the existence of income. However, in a triple-entry bookkeeping system, revenue determination, for example, occurs in continuity over the transactions that occur (Fascia & Mosco, 2019; Chwdury et al., 2020). Therefore, blockchain technology requires continuity of transactions, so the application of double-entry in the transaction recording system is still less relevant and criticized by some scientists related to determining the recognition of transactions. In other words, the authors argue that based on the weaknesses of double-entry related to the application of blockchain technology, the implementation of double-entry is irrelevant to transactions involving many events within the same period.

Triple-Entry Bookkeeping: The juxtaposition of the Blockchain Technology Paradigm

The concept of triple-entry introduced by Ijiri in his thesis entitled "Triple-Entry and Momentum" explains that economic events cannot be determined only to the extent of determining two points of time. However, it is related to the many distributions of transactions that occur continuously, so the implementation of double-entry cannot be implemented in transactions involving blockchain technology. Thus, triple-entry implementation in blockchain transaction systems is relevant to events or transactions that occur continuously (Lee et al., 2021; Chwdury et al., 2020; Ijiri, 1986; Fraser, 1993).

Currently, the three-entry bookkeeping system is associated with distributed ledger technology. It is mainly used in blockchain technology, a distributed ledger technology that can include intelligent contracts (Chwdury et al., 2020; Perez et al., 2020). Distributed ledger technology represents the decentralized maintenance of one or more ledgers from different parties. Appropriate steps are taken to ensure that newly added transactions are adopted in all copies of the ledger and that there is an agreement (consensus) on the current status of the ledger (Metzger, 2019).

Intelligent contracts are electronic contracts programmed as software, which run independently after one of the given contract terms is met. Therefore, related actions, such as payments, run automatical if there is a corresponding trigger. The case of the corresponding trigger is the fulfilment of one of the terms of the contract (Mitschele, 2019). Ultimately, double-entry bookkeeping is being expanded into triple-entry bookkeeping, with the third entry as a link between the two double-entry ledgers. Indicating the third entry

serves as proof of work to confirm that all participating parties viewed it. Given that, it will serve as an entry and a receipt simultaneously (Lee et al., 2021).

Nevertheless, a double-entry bookkeeping system is static since revenue assessment requires determining two-time points (Ijiri, 1986). Meanwhile, momentum indicates the state (Earned Income) at one point in time, which makes it a dynamic assessment (Income = realization of momentum over time) and *momentum* is defined as the rate at which income is earned. This equation allows judgment at a given time, unlike the double-entry bookkeeping system, where two points must be determined for one period (Fraser, 1993).

Thus, accountants gain a different perspective by considering the financial forecasts of a company. In short, the accounting system will be more dynamic and focused not on the present state (Balance Sheet) but future forecasts (Ijiri, 1986). The connotation of the current triple-entry bookkeeping term has nothing to do with its original semantics. They used the same word as Y. Ijiri applies the scientific component to redefining a sociological problem by introducing stylistic phenomena and momentum into standard accounting techniques (Walker, 2016).

Ultimately, triple-entry bookkeeping contributes to more transparency, trust, assurance, reconciliation, and future references (Ijiri, 1986). As mentioned earlier, the accounting connotation of this three-day entry is mainly in line with the concept of I. Furthermore, Grigg (2005) was merging with distributed ledger technology according to the application of blockchain technology in economic transactions. Thus, with this system, as mentioned earlier, the removal of asymmetric information will come into force. In this sense, when considering the subject of bookkeeping, the problem of the leading agent can be regarded as "solved".

Foucault's Paradigm on Triple Entry Bookkeeping: The Antecedent Critiques

Foucault is one of the most famous philosophers with his thesis "Power and Knowledge". The two statements cannot be separated, where power requires knowledge as the logical basis for exercising that power (Syarifuddin, 2018). On the other hand, knowledge requires power in order to realize knowledge that can explain the reason a phenomenon can occur. Thus, Foucault's knowledge will give birth to power that later contributes to power that impacts knowledge itself. Foucault assumes that knowledge is understood not as something sustainable but as a discontinuity. Foucault understands knowledge not as a connecting line that continues the previous line or that connects one period with another, but rather a journey that occurs discontinuously (Campbell & Kelly, 2013; Flew, 2015; Lemke, 2015).

Foucault's view of the phenomenon of blockchain technology, namely that the application of technology in economic transactions involving many algorithms is not something that stands alone (Mudhoffir, 2013). It is related to a discontinuity of value that has occurred before so that the phenomenon that occurs today is an event that is an update of existing events (Syarifuddin, 2018; Walker, 2016; Deloitte, 2016). In simple language, that blockchain technology has been predicted by Ijiri as his thesis reveals the existence of a triple-entry concept that requires the concept of transaction juxtaposition.

The concept states that there is a push in every economic event that determines the reason for the event to occur. Triple-entry and double-entry are a matter of concept and implementation alone, furthermore Foucault's view does not explicitly explain the interrelationship of the two things. Nevertheless, the author argues that Foucault viewed a concept of knowledge as archaeological in nature. This means that double-entry and triple-

entry are historical events of economic events that occur continuously (Campbell & Kelly, 2013; Flew, 2015; Lemke, 2015).

Foucault's view of bookkeeping events hints at the historical emphasis the concept takes place, where double-entry occurs over past transaction events relevant to current economic events. However, as knowledge and technology developed, the concept of double-entry was widely considered by experts and scientists, thus introducing a new concept of triple-entry (Fraser, 1993; Ijiri, 1986). When referring to Foucault's view, it can be seen that the existence of both concepts is a matter of conceptual phenomena only.

Foucault stated that historical events such as both concepts are a discourse analysis to understand the hidden meaning of the use of the concept. Furthermore, Foucault states that power over knowledge provides a new understanding of the development of pre-existing knowledge. Finally, the development of existing knowledge gave birth to a new dominance.

Foucault's concept is in line with the development of the double-entry and triple-entry bookkeeping systems. The development of these two concepts concerns the existence of blockchain technology that has dominated economic transactions, so a new bookkeeping paradigm is needed that can overcome this (Ijiri, 1986; Fraser, 1993; Zaid, 2000). Thus, the authors argue that Foucault's philosophical emphasis on the concepts of triple-entry and double-entry in bookkeeping systems that adopt blockchain technology is the power of knowledge. This means that existing knowledge of double-entry gives birth to a new paradigm of blockchain phenomenon in the course of economic transactions. This then gave birth to the triple-entry paradigm as a bookkeeping concept that successfully explains the relationship between income and expenses and how both occur simultaneously.

Foucault's power and knowledge of the triple-entry paradigm ultimately led the author's goal of revealing discounted history and events over pre-existing bookkeeping. This is because Foucault's emphasis on events that have existed in a previous event that undergoes changes in thought patterns and concepts. With another, the concept occurs on the basis of shifting the application of economic transactions that occur cyclically. Therefore, Foucault's thinking on bookkeeping systems that adopt blockchain technology is relevant in terms of explaining the relationship between the problem of the occurrence of existing events and the application of new concepts.

Ultimately, Foucault's thinking on the blockchain technology paradigm is a matter of knowledge power becoming dominant over other knowledge (Walker, 2016; Metzger, 2019; Flew, 2015). In simple language, the author argues that triple-entry has mastered the dominance of double-entry in the history of bookkeeping systems in economic transactions. However, triple-entry dominance will be replaced by the dominance of newer concepts and can be understood as thoroughly as the double-entry dominance that has existed to date, although triple-entry has been studied the level relevant to current economic transactions.

METHOD

We were unable to identify the past literature reviews that focused on concepts or definitions regarding the utilize of blockchain technology in economic transactions (Qu & Dumay, 2011; Schmitz & Leoni, 2019). In addition, no previous literature consistently describing between double and triple entry bookkeeping, when it comes to aspects of blockchain transactions. Therefore, by practicing a systematic approach to literature, we fill this gap in understanding by inserting the critical paradigm was brought by Foucault. According to Littell (2008) and Schmitz and Leoni (2019), a systematic review "aims to comprehensively discovered and synthesized research related to a particular question, using

an organized, transparent, and replicable procedure at every step in the process.” (p.1) to identify, in our case, scientific contributions in the field of double and triple entry bookkeeping (Tranfield et al., 2003). Thus, our review provides an interdisciplinary overview of understanding blockchain transactions from the aspects of double and triple entry bookkeeping. Fink (2010) proposed four steps for a systematic review, which we used as a foundation and which we enriched using the structure proposed by Tranfield et al. (2003). In the first step, we select our research questions, a database of bibliographical articles and websites, and appropriate search terms. Then, we used practical review criteria for inclusion or exclusion from the relevant literature (Xiao & Watson, 2019). In the third step, we develop and apply methodological review criteria. Finally, we synthesize our findings.

Step 1: Choose appropriate research questions, databases, websites, and search terms

Since we had difficulty identifying comprehensive articles on blockchain technology accounting, our questions for a systematic review were broad: How can blockchain technology accounting understanding be identified?; or what is the background to adjustments the necessary of blockchain bookkeeping, apart from double and triple entries?; To search the literature, we chose the search term “blockchain technology” which also includes those related to double entry accounting and blockchain technology and “triple entry accounting and blockchain technology”. In addition, we borrowed a broader definition to identify double and triple entry bookkeeping on blockchain technology. Next, we analyze from the aspect of Foucault’s philosophy. Therefore, we are also broadening our search not only for double and triple entry bookkeeping, but also for an understanding of Foucault’s philosophy that can bridge the two differences. In addition, the issues we deal with related to blockchain technology accounting are identified by the search keyword “blockchain”; “bookkeeping”; “Foucault paradigm”; and open entry bookkeeping.

The databases searched were those provided by major publishers (Elsevier (www.sciencedirect.com), Emerald (www.emeraldinsight.com), Springer (www.springerlink.com), and Wiley (www.wiley.com)) and by libraries services (Complete Business Resources and Web of Science). Using the specified search terms, we search for the full text of the document. Following the recommendations of Tranfield et al. (2003) that searches should not be limited to bibliographical databases, we also use Google Scholar to identify unpublished studies, conference proceedings, industry trials and similar publications. For this additional search, we limited the search to the keywords “double entry bookkeeping” and “triple entry bookkeeping”. In addition, we seek contributions from accounting firms or other organizations by analyzing their websites

Step 2: Implement practical screening criteria

We include journal papers, books, research reports, conference proceedings, and practitioner-oriented contributions written in English without time limit (Google Scholar includes publications published since 2010-2020). We limited our search to English to avoid language bias or preference for a particular language because there is evidence that “language-restricted meta-analyses, compared to language-inclusive meta-analyses, are not different” (Moher et al., 2000, p. 964). We accept empirical as well as conceptual/theoretical publications, but we exclude presentations, book reviews, and comments. Thus, quality criteria such as journal rankings are not used for exclusion purposes because this review aims to provide a comprehensive picture of the meaning of carbon accounting.

Finally, we include publications focused on double entry bookkeeping and triple entry bookkeeping related to blockchain technology bookkeeping in the Foucault paradigm. Publications that only mention double-entry and triple-entry bookkeeping and are not related to blockchain technology bookkeeping are of secondary importance only. Publications that discuss double-entry bookkeeping and are not related to blockchain technology bookkeeping are also excluded. Surprisingly, many papers discuss the atmosphere of triple entry bookkeeping, but very far from the relevance of the topics discussed are excluded. These papers are also excluded.

Step 3: Apply methodological screening criteria

In the third step, we identified methodological screening based on a review protocol for content analysis determined. The categories for examining selected publications are derived from previous theoretical work (Krippendorff, 2004; Van, 2020). The review protocol includes four parts. The first section contains bibliographical data for each publication such as author, year and title of publication, author affiliations, geographic origin of the author, type of publication, and, if it is a journal, name of the journal and title. This final step identifies our findings by providing a bit of a stimulant to answer our preconceived notions regarding the accounting of blockchain technology. Comprehensive discussion will be discussed next.

RESULT AND DISCUSSION

Triple-entry Bookkeeping System: The New Path Ecosystem of Block-chain Transaction Bookkeeping

Foucault's thought on the power of knowledge seems to know that knowledge will undergo changes and paradigm shifts. The knowledge initially echoed as a rigid system built on the phenomenon of knowledge most popular. Foucault describes knowledge as power which means that knowledge will continue to change and master knowledge with each other (Syafiuddin, 2018; Van, 2020). The power over knowledge was presented as the indoctrination of the discontinuity of knowledge. Ultimately, it becomes a breakthrough in developing pre-existing over the knowledge (Walker, 2016). For example, the author illustrates the development of block-chain technology was shaped from various transactions in the world.

Block-chain technology is one of the drivers to develop the double-entry bookkeeping system toward triple-entry in the digital era. It will continue to change along with the development of that technology. Double-entry, as the initial concept popularized by its inventors, states that economic transactions are recorded based on two systems, debit and credit (Pacioli, 1494; Syafiuddin, 2018; Van, 2020). However, in reality, the system cannot explain how it happened. The researchers revealed that the concept offered in double-entry is based on the person's experience in classifying economic transactions within the limits of debit and credit on an economic transaction T account (Liu et al., 2019; Schmitz & Leoni, 2019).

The concept of debit and credit as stated by Pacioli, is an adoption of the bookkeeping system of merchants in Venice that uses a similar model (Zaid, 2000). Therefore, very crucial to understand the reasons for applying the concept in implementing current economic transactions, not only how to understand how did the mechanism can be follows. However, the essence of the underlying concept is very important to link between economic transaction and bookkeeping systems. Therefore, we argue that the concept of double-entry introduced and exists until now is a concept that is not without a clear basis

knowledge, it was needed to expand the double entry concept until be able to elaborate of them. However, the primary basis for knowledge is very important to consider, since the concussion paradigm still popular for economic actors in classifying their date-to date economic events.

The next problem arises from the blockchain phenomenon grounded in various parts of the world as if it has become a new virus in economic events. The double-entry system is a severe problem with grounding blockchain technology in the scope of economic transactions. Chowdurry (2021) and Van (2020) revealed that blockchain is a digital system that can accelerate business transactions in a cycle of business activities. One of the most significant advantages of blockchain is the highly favourable encryption consensus for the availability of data assurance to remain securely verified.

A paradigm shift was needed in presenting economic events that follow their limits. The paradigm is in line with what Foucault stated, that the paradigm of knowledge continues to undergo renewal and does not rule out the possibility of a paradigm that is better than previous knowledge (Syarifuddin, 2018). We clearly described the blockchain phenomenon where double-entry, as the only bookkeeping system that economic actors widely adopt, almost cannot be changed in the slightest and becomes a tradition of recording transactions of a fundamental nature.

However, if it is implemented in a blockchain-based bookkeeping system, it is entirely invalid. Therefore, Foucault clearly stated that there is mastery of existing knowledge and popularized the bookkeeping system that is currently the focus of researchers so that it can be implemented practically (Walker, 2016). Therefore, triple-entry is the answer to the blockchain problem that many researchers have explored. Furthermore, this entry is because this bookkeeping system adopts various elements that can be used as a basis for recording transactions that dominate blockchain technology.

Triple-entry is one proof that the power of knowledge conveyed by the philosopher Foucault exists. Triple-entry answers how blockchain transactions can be recorded and classified appropriately by using the concept of trebit as the initial formulation (Ijiri, 1989; Van, 2020). As stated in the thesis written by Ijir, triple-entry can explain how the concept of economic transactions is recorded in three approaches as the basis for the concept. Some researchers argue that blockchain-based accounting is the next step for the accounting industry (Ijiri, 1986a, 1989b). Ultimately, blockchain is a suitable architecture to be the environment on which the new accounting system proposed by Grigg is based and necessary with recent financial events that encourage decentralized and distributed trust management (Grigg, 2007).

In reality, triple-entry changes back against various backgrounds over the implementation of the system. Triple-entry is expressed in various terms to explain the reason for implementing the bookkeeping system according to transaction conditions in the blockchain. Therefore, the author argues that triple-entry will eventually experience a new paradigm that can adapt to the development of blockchain technology in the future. Following the mastery of knowledge expressed by Foucault, knowledge will continue to undergo updates, as is the case with the bookkeeping system that is the basis for recording economic transactions (Lemke, 2015). Thus, the authors argue that following Foucault's view, the existing knowledge of various doctrines developed by various scientists, including Pacioli, who introduced the concept of double-entry, is by no means something consistent. Foucault characterizes knowledge as something that flows continuously following the phenomena that occur.

Instructions for "The Power over Knowledge" as Part of Triple-Entry

As if knowledge cannot be separated from the mechanism of knowledge that is sober. The fact of triple-entry has proven that the beliefs blended into the accountant's mindset become biased when blockchain technology becomes part of the company's business today. Could double-entry be accurate in presenting data and facts involving blockchain systems? The answer is obviously no. The primary key to success in blockchain transactions is the accurate, massive, and controlled presentation of data from various aspects of reliability in providing financial information to users.

A design in corporate accounting may be able to produce helpful information for the user. The success of the information for users can be considered related to the presentation and source of information obtained. However, the technology, touted as a blockchain, is unsuitable if our recording system is only based on two entries. So, adjustments are needed to reconcile the fingering of blockchain technology in today's transaction recording system.

Two semantic issues arise in the discussion of blockchain-based triple-entry accounting, namely where the nature of triple entry lies and what precisely accounting means. Concerning the first initialization, although the entry is only a transaction record, the irregularity or multiple of the entry system is usually associated with the presence or absence of a requirement to balance one entry with another. This suggests that triple-entry accounting introduces other balancing requirements, which is not the case (in fact, three-entry books can support single and double-entry bookkeeping methods). Secondly, even though Boyle and Grigg (2007) had envisioned a very similar design, they named it "TEA" for different reasons, with the added complication that Boyle gave the system this name after the unimportant aspect of it (in particular, aside from sharing transaction entries, there are optional fields or "stubs" available to each party for personal annotations). Third, objections can be raised to the reason for the name used by Grigg ("three receipts in three places"), namely that a DLT can store receipts in more than three places, and some Boyle designs can keep them at less than three (Grigg, 2007).

Fourth, objections may also be raised on Odom's grounds for this name ("triple receipt") that the second and third signatures may not exist at any given time. In Triple-Entry Accounting, local copies of shared transaction storage can be integrated as helper books into transactional party ledgers (three receipts in three places). Since shared entries are the only reliable source of transaction records, TEA is sometimes called "single-entry bookkeeping" (Pacio, 2018a, 2020). However, we do not recommend the use of this term. First, the term "single-entry bookkeeping" is already reserved for a bookkeeping system that is simplified in differentiation from more complex double-entry bookkeeping.

Historically, the basic single-entry system only records stock accounts, i.e., assets and liabilities, without including current accounts such as income and expenses recorded by the double-entry bookkeeping system (Ijiri, 1986, p. 746) and without including two entries or sides (debit and credit) for each transaction (Grigg, 2005). However, as we have established, both single-entry and double-entry methods can be supported by TEA. As a result, Ian Bonsón and Bednárová, (2019) drafted TEA to consist of "double-entry pairs", with each pair connected to the central receipt, resulting in three parties holding the signed receipt. This interconnection is another reason to refer to this concept as triple-entry, not single-entry. Following this logic, triple-entry accounting has become an industry-established term (Gröblacher & Mizdraković, 2019).

At this point, we want to clarify the polystyrene of the term "in". In the context of "historical" single-entry bookkeeping, "entry" is a record of changes in stock accounts such as assets and liabilities (Ijiri, 1986, p. 746) without an equivalent to that record. In "modern"

single-entry bookkeeping, this is a record of income or expenses, also unchallenged (IRS, 2015). In double-entry bookkeeping, the entry is a debit or credit record (IRS, 2015). In McCarthy REA and Boyle (2001g, 2003d) STR, entries are atomic records of economic events that do not need balancing.

In TEA Boyle (2003d), three entries are an STR entry and two private transaction stubs (optional)²⁰ for the parties (this is called the "stub - shared entry - stub" structure). Finally, in Odom and Grigg's TEA, the entry is three signature notes: three signed messages from the parties (Odom, 2013; Grigg, 2005), which correspond to Boyle's offer, acceptance, and validation (2001b). Furthermore, a single copy of the three-time signed recording is in three places (Grigg, 2005), although this is unimportant. Grigg's "triple-entry" concept is widespread in the blockchain world, with its definition of TEA beating Boyle's. Since Grigg's idea of "entry" differs from the general accounting acceptance of "entry", this all means that the recording of three times tea signatures does not necessarily challenge the recording of double-entry bilateral transactions (Bonsón & Bednárová, 2019).

Nevertheless, blockchain systems can also allow the execution of programs that perform on-chain accounting functions. This can be achieved through intelligent contracts: Digital programs that automate tasks related to contract execution, documentation or control that minimize the need for trusted intermediaries (Szabo 1994, 1996). These tasks may include bookkeeping, but also accounting. In the particular case of Bitcoin, its innovative contract capabilities face several obstacles, which can lead to the need to build an accounting suite that is almost entirely off-chain. Nevertheless, other networks may be able to perform this role to a greater degree (whether desirable or cost-effective do so is beyond the scope of this paper).

CONCLUSION

This study conducts a deconstructive exploration related to the thought of the philosopher Foucault who has his thesis that knowledge has power which is then linked to the existence of double-entry and triple-entry recording systems that many accountants are unaware of now and in the future. On the other hand, the development of the accounting world is influenced not only by direct events but also by agile technology, which some practitioners in the accounting field often overlook.

Foucault's philosophical review emphasizes aspects of knowledge mastery in various dimensions of knowledge. The doctrine of the double-entry paradigm as something definite and rigid was directly opposed by Ijiri, who introduced the triple-entry bookkeeping paradigm as a new avenue in identifying transactions involving blockchain technology (Ijiri, Y., 1986a, 1989b, 1993c). On several occasions, triple-entry was implemented and expressed precisely as something new. Foucault's view of knowledge mastery exists by proving the triple-entry paradigm of the weaknesses of the double-entry bookkeeping system (Walker, S. P, 2016).

The technology of the beam chain that develops and blends with accounting transactions has introduced a new concept in the recording system that is currently still run by every accountant. However, TEA, as a paradigm introduced by Ijiri, seeks to help prepare a more comprehensive recording system and can account for the correctness of the data. Therefore, double-entry, although experiencing an escalation of technological developments, can help accountants prepare definitive financial statements and are helpful for users of financial statements.

Triple-entry is one of the new paradigms for economic actors in classifying economic transactions based on blockchain technology. Therefore, the authors conclude that the

existence of blockchain technology seems to dictate that the double-entry paradigm is irrelevant. However, triple-entry does not remove the existence of a double-entry bookkeeping system. However, triple-entry strengthens the double-entry base as a transaction bookkeeping system when it involves blockchain technology. Thus, the author argues that Foucault's view of power and knowledge is not based on techniques for mastering that knowledge. However, the mastery of knowledge popularized by Foucault is a strategy and policy in preparing steps to change the paradigm of the prima donna of each perpetrator. For example, in this article, the author raised the issue of triple-entry and double-entry in the bookkeeping system of economic transactions.

Our study is not without limitations. We are fully aware that the impact of advances in information technology and Big Data are two things that can make a major contribution to the development of accounting and finance literature. Our research only makes a little contribution to aspects of Blockchain technology that can influence perceptions of bookkeeping methods that have so far been adopted by a number of professional accountants. Therefore, future research agenda can provide further considerations, how does the technological advances should affect the dynamics of accounting and financial aspects in the future. Apart from that, professional accountants also need to more consider about the skills and abilities to always adapt and move dynamically in the midst of being hit by waves of increasingly rapid technological advances.

This study provides a little development of the existing literature on the influence of information technology and Big Data on bookkeeping aspects that have been adopted by a few professional accountants. First, this research provides an understanding of how a double-entry bookkeeping system can compete with the transaction speed of the Blockchain. Second, this study explains the importance of Foucault's paradigm as a source of scientific development, that the strength of scientific development is based on the limitations of human thought. Then science will be expanded into new knowledge that is continuously growing. Therefore, the development of science in the context of this research was the existence of a debatable about how a double entry bookkeeping system can compete with a three-entry bookkeeping system.

REFERENCES

- Bonsón, E., & Bednárová, M. (2019). Blockchain and its implications for accounting and auditing. *Meditari Accountancy Research*, 27(5), 725-740. <https://doi.org/10.1108/MEDAR-11-2018-0406>
- Chowdhury, E. K. (2021). Financial accounting in the era of Blockchain - A paradigm shift from double entry to triple entry system. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3827591>
- Coyne, J. G., & McMickle, P. L. (2017). Can blockchains serve an accounting purpose? *Journal of Emerging Technologies in Accounting*, 14(2), 101-111. <https://doi.org/10.2308/jeta-51910>
- Deloitte. (2016). *Blockchain: A game changer for audit processes? Deloitte Malta: Audit & Assurance*. Deloitte Malta. Retrieved January 5, 2022, from <https://www2.deloitte.com/mt/en/pages/audit/articles/mt-blockchain-a-game-changer-for-audit.html>
- Dyer, S. (2020). Double-entry bookkeeping. *A Common-Sense Method of Double-Entry Bookkeeping on First Principles*, 1-120. <https://doi.org/10.4324/9781003050179-1>
- Faccia, A., Moşteanu, N. R., & Leonardo, L. P. (2020). Blockchain Hash, the missing axis of the accounts to settle the triple entry bookkeeping system. *Proceedings of the 2020*

- 12th International Conference on Information Management and Engineering*.
<https://doi.org/10.1145/3430279.3430283>
- Faccia, A., & Mosco, D. (2019). Understanding the nature of accounts using comprehensive tools to understand financial statements. *Financial Markets, Institutions and Risks*, 3(3), 18–27. [https://doi.org/10.21272/fmir.3\(3\).18-27.2019](https://doi.org/10.21272/fmir.3(3).18-27.2019)
- Fink, A. (2010). *Conducting Research Literature Reviews. From the Internet to Paper*, third ed. SAGE Publications, Inc., Thousand Oaks.
- Fraser, I. A. (1993). Triple-entry bookkeeping: A Critique. *Accounting and Business Research*, 23(90), 151–158. <https://doi.org/10.1080/00014788.1993.9729872>
- Grigg, I. (2005). Triple Entry Accounting. *Tribhuvan University Journal*, 3(September), 1–15. <https://doi.org/10.13140/RG.2.2.12032.43524>
- Grigg. (2007). The secret of double-entry bookkeeping: Personification of accounts. *Proceedings of the Third International Economic Symposium (IES 2018)*. <https://doi.org/10.2991/ies-18.2019.40>
- Gröblacher, M., & Mizdraković, V. (2019). Triple - entry bookkeeping: History and benefits of the concept. *Proceedings of the 6th International Scientific Conference - FINIZ 2019*. <https://doi.org/10.15308/finiz-2019-58-61>
- Houghton, B.C. (2016). In the shoes of Luca Pacioli—double entry bookkeeping and Financial Literacy. *International Handbook of Financial Literacy*, 621–637. https://doi.org/10.1007/978-981-10-0360-8_39
- Ibañez, J. I., Bayer, C. N., Tasca, P., & Xu, J. (2020). Rea, triple-entry accounting and blockchain: Converging paths to shared Ledger Systems. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3602207>
- Ijiri, Y. (1986). A Framework for Triple-entry Bookkeeping. *The Accounting Review*, Vol. LXI, No. 4, 745-759
- _____. (1989). *Momentum Accounting and Triple-entry Bookkeeping: Exploring the Dynamic Structure of Accounting Measurements*. Sarasota, United States of America: American Accounting Association
- _____. (1993). The Beauty of Double-entry Bookkeeping and its Impact on the Nature of Accounting Information. *Economic notes: Economic Review of Banca Monte dei Paschi di Siena*, 22 (2), 265-285
- Jaya, A., Mamoto, C. J., & Sulhiyah, S. (2019). Konstruksi Identitas Diri Dalam Komik Ruronin Kenshin: Kajian Analisis Wacana kritis Michel Foucault. *PHILOSOPHICA Jurnal Bahasa, Sastra, Dan Budaya*, 2(2). <https://doi.org/10.35473/po.v2i2.347>
- Kuznetsov, A. (2019). The secret of double-entry bookkeeping: Personification of accounts. *Proceedings of the Third International Economic Symposium (IES 2018)*. <https://doi.org/10.2991/ies-18.2019.40>
- Lee, L. S., Appelbaum, D., & Mautz III, R. (2021). Blockchains: an experiential accounting learning activity. *Journal of Emerging Technologies in Accounting*. <https://doi.org/10.2308/jeta-2020-009>
- Libby, R. (2017). *Financial Accounting Financial Accounting*, 4–15. <https://doi.org/10.4135/9781446214688.n1>
- Littell, J.H., (2008). *Systematic Reviews and Meta- Analysis*. Oxford University Press, USA.
- Liu, M., Wu, K., & Xu, J. J. (2019). How will blockchain technology impact auditing and accounting: Permissionless versus permissioned blockchain. *Current Issues in Auditing*, 13(2). <https://doi.org/10.2308/ciia-52540>

- Mawardi, A. I. (2020). Charles Wright mills dan teori power elite: Membaca Konteks dan pemetaan teori sosiologi politik tentang kelas elite kekuasaan. *Jurnal Sosiologi Pendidikan Humanis*, 4(2), 73. <https://doi.org/10.17977/um021v4i2p73-83>
- Melse, E. (2010). Accounting for trends : Relevance, explanatory and predictive power of the framework of triple-entry bookkeeping and momentum accounting of Yuji Ijiri. <https://doi.org/10.26481/dis.20081003em>
- Metzger, J. (2019). Gabler Wirtschaftslexikon. Retrieved from Distributed Ledger Technologie (DLT): <https://wirtschaftslexikon.gabler.de/definition/distributed-ledger-technologie-dlt-54410>
- Mitschele, P. D. (2019). Gabler Wirtschaftslexikon. Retrieved from Smart Contract: <https://wirtschaftslexikon.gabler.de/definition/smart-contract-54213>
- Moher, D., Pham, Klassen, T. P., Schulz, K. F., Berlin, J. A., Jadad, A. R., & Liberati, A. (2000). What contributions do languages other than English make on the results of meta-analyses? *Journal of Clinical Epidemiology*, 53(9), 964-972. [https://doi.org/10.1016/S0895-4356\(00\)00188-8](https://doi.org/10.1016/S0895-4356(00)00188-8)
- Mudhoffir, A. M. (2013). Teori kekuasaan Michel Foucault: Tantangan Bagi Sosiologi Politik. *MASYARAKAT: Jurnal Sosiologi*, 18(1). <https://doi.org/10.7454/mjs.v18i1.3734>
- Needles, B.E., Powers, M., (2012). Financial Accounting Financial Accounting. <https://doi.org/10.4135/9781446214688>
- O'Bryan, D., Berry, K. T., Troutman, C., & Quirin, J. J. (2000). Using accounting equation analysis to teach the statement of cash flows in the First Financial Accounting Course. *Journal of Accounting Education*, 18(2), 147-155. [https://doi.org/10.1016/s0748-5751\(00\)00010-5](https://doi.org/10.1016/s0748-5751(00)00010-5)
- Pacioli, L. (1494). Retrieved January 5, 2022, from <https://www.icaew.com/library/library-collection/historical-accounting-literature/highlights-of-the-collection/summa-di-arithmetica>
- Perez, D., Xu, J., & Livshits, B. (2020). Revisiting transactional statistics of high-scalability blockchains. *Proceedings of the ACM Internet Measurement Conference*. <https://doi.org/10.1145/3419394.3423628>
- Platonova, N. (2016). Partie triple. *Dictionnaire Historique De Comptabilité Des Entreprises*, 394-398. <https://doi.org/10.4000/books.septentrion.20014>
- Qu, S. Q., & Dumay, J. (2011). The qualitative research interview. *Qualitative Research in Accounting and Management*, 8(3), 238-264. <https://doi.org/10.1108/11766091111162070>
- Schmitz, J., & Leoni, G. (2019). Accounting and auditing at the time of Blockchain Technology: A research agenda. *Australian Accounting Review*, 29(2), 331-342. <https://doi.org/10.1111/auar.12286>
- Spiceland, J. D., Thomas, W., & Herrmann, D. (2010). Financial accounting. McGraw-Hill Education.
- Sullivan, M. C., & Benke, R. L. (1997). Comparing introductory financial accounting textbooks. *Journal of Accounting Education*, 15(2), 181-220. [https://doi.org/10.1016/s0748-5751\(97\)00005-5](https://doi.org/10.1016/s0748-5751(97)00005-5)
- Sumi, Y., & Noguchi, M. (2021). The use of accounting information for the Sugar Business Operations of the south seas development company. *Labor History*, 1-23. <https://doi.org/10.1080/0023656x.2021.1931828>
- Syafiuddin, A. (2018). Pengaruh Kekuasaan Atas Pengetahuan (memahami teori Relasi Kuasa Michel Foucault). *Refleksi: Jurnal Filsafat Dan Pemikiran Islam*, 18(2), 141. <https://doi.org/10.14421/ref.2018.1802-02>

- Tranfield, D., Denyer, D., & Smart, P. (2003). A systematic review of literature on offshoring of value chain activities. *Journal of International Management*, 19(4), 390-406. <https://doi.org/10.1016/j.intman.2013.03.011>
- Van, H. S. (2020). Blockchain in business. *Decoding Blockchain for Business*, 1-36. https://doi.org/10.1007/978-1-4842-6137-8_1
- Walker, S. P. (2016). Revisiting the roles of accounting in Society. *Accounting, Organizations and Society*, 49, 41-50. <https://doi.org/10.1016/j.aos.2015.11.007>
- Warren, C., Reeve, J.M., Duchac, J., 2018. *Financial Accounting*. McGraw-Hill Higher Education.
- Weigandt, J.J., Kieso, D.E., Kimmel, P.D. (2017). *Financial Accounting*. Wiley
- Wild, J. (2017). *Fundamental Accounting Principles*. McGraw-Hill Higher Education
- Williams, J. (2018). *Financial Accounting*. McGraw-Hill Higher Education.
- Xiao, Y., & Watson, M. (2019). Guidance on Conducting a Systematic Literature Review. *Journal of Planning Education and Research*, 39(1), 93-112. <https://doi.org/10.1177/0739456X17723971>
- Yamey, B. S. (2005). The historical significance of double-entry bookkeeping: Some non-Sombartian claims. *Accounting, Business & Financial History*, 15(1), 77-88. <https://doi.org/10.1080/09585200500033089>
- Zaid, O. A. (2000). Were Islamic records precursors to accounting books based on the Italian method? *Accounting Historians Journal*, 27(1), 73-90. <https://doi.org/10.2308/0148-4184.27.1.73>