

Is Accounting a Science? Mainstream Accounting Research Sees a Parallel Between Physical and Social Sciences and Accounting

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Research Article

Is Accounting a Science? Mainstream Accounting Research Sees a Parallel Between Physical and Social Sciences and Accounting

Risky Rainanda Ritonga¹, Devi Marny Agustina Simanjuntak², Iskandar Muda³

Abstract

Accounting is a science, a systematic process of identifying, recording, classifying and communicating the economic facts and numbers of an organization. Accounting is a science, following the scientific path of finding and presenting financial results in a structured way. As accounting research has improved dramatically in the last few years, accounting has been concluded to be a social science that studies the characteristics of how accounting functions as a social and institutional practice. This study aims to explain accounting as science and describe parallel between physical and social sciences and accounting based on literature containing theory from both published and unpublished hard-copy and soft-copy scientific papers in books, articles, and online journals.

Keywords: Accounting as Science, Social Science.

1. INTRODUCTION

Accounting as an art and as a science is a difference of view that remains a debate among accounting scientists. The difference in paradigm on the general understanding of accounting is the most common perspective on scientific behavior, Accounting is still understood as the American Accounting Association definition in A Statement of Basic Accounting Theory as a process of identifying, measuring, and providing economic and financial information. enable the generation of appropriate and rational considerations and decisions by the users of the economic information. Accounting is placed on a practical level as a decision-making. interpreting accounting like this does not mean wrong because conceptually related to understanding accounting and accounting standards obtained from the reference, generally accounting should be placed in a practical environment as an important requirement in sorting out the principles and concepts that will be used as guidelines for the development of accounting science standards, rarely It is realized that excessive emphasis on practical aspects actually makes accounting confined and merely a means for making the right decisions. In its development at this time there are many debates about whether accounting is seen as a science or an art among accounting scientists. Not to mention, on the other hand, if you look more deeply into accounting, it is very often associated and associated with social science, physics and other sciences so that you will find accounting

^{1,2,3} Universitas Sumatera Utara, Medan, Indonesia

characters that can be presented in various dimensions, points of view, paradigms, or what else to call them. the prevalent. Is accounting a science or an art? That's what actually creates curiosity for people who are competent in their field to do research.

The status of accounting research has improved dramatically in the last few years, accounting has been concluded to be a social science that studies the characteristics of how accounting functions as a social and institutional practice. The situation has changed in favor of a dynamic research agenda, as evidenced by the transformation of accounting into a fully fledged 'normal science' with a competing paradigm for domination. Mainstream accounting research sees a parallel between physical and social sciences and accounting, justifying in the process a hypothetic-deductive account of scientific explanation and the need for confirmation of hypotheses.

The primary question – whether accounting is a science – has never been answered adequately. A good definition of a science, provided by Buzzell, is:

‘a classified and systematized body of knowledge ... organized around one or more central theories and a number of general principles ... usually expressed in quantitative terms ... knowledge which permits the prediction and, under some circumstances, the control of future events’

Accounting meets Buzzell's criteria, in that it: has a distinct subject matter, includes underlying uniformities and regularities conducive to empirical relationships, authoritative generalizations, concepts, principles, laws and theories.

Accounting has already begun to consider in light of environmental issues, and may see its involvement evolve over the next few years. Such results increase the need for corporate reporting on environmental and financial performance. Such reports have the potential to provide a higher level of visibility into a company's environmental activities and impacts, often shedding light on the invisible. However, it is also important to recognize that visibility is not the only possible result of corporate reporting in this area (Milne & Gray, 2007). In fact, such reports can even reduce the level of knowledge about a company and its environmental activities.

This article reviews the explanation and discussion of accounting as a science, and the parallel between physical sciences, social sciences, and accounting.

2. LITERATURE REVIEW

Accounting knowledge can be seen from several accounting definitions as follows: Accounting according to the Accounting Principles Board (APB) in Statement No. 4 states: Accounting is a service activity whose function is to provide quantitative information, especially financial in nature, about economic entities that are considered useful in making economic decisions, in determining logical choices among actions, alternative. While the American Institute of Certified Public Accountants (AICPA) in Accounting Terminology Bulletin No. 1, 1953 states: Accounting is the art of recording, grouping and summarizing in a meaningful way, all transactions and events of a financial nature, and interpreting the results thereof. Some experts mention the definition of Accounting as follows: Paul Grady in ARS No. 7, AICPA, 1965, defines: Accounting is a body of knowledge and organizational functions that are systematic, original and authentic, recording, classifying, processing, summarizing, analysing, interpreting all transactions and financial events

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and characters that occur in the operations of accounting entities in order to provide meaningful information that management needs as a report and accountability for the trust it has received. Kieso and Weygandt, states: 1. Accounting is an information system that identifies, records and communicates economic events from an organization to interested parties. Accounting as a tool for information providers. 2. Accounting as the art of recording, classifying, recording, classifying and summarizing, to the art of interpreting the results of financial transactions. 3. Accounting as a body of knowledge or a set of knowledge resulting from a thought process that produces concepts, principles, standards, procedures, techniques in order to provide meaningful information, as management responsibility. 4. Accounting as a system that processes input in the form of economic events or business transactions from a single business unit, in such a way through identifying, measuring, recording, summarizing, and communicating the results (output) in the form of information to internal and external parties. It can be concluded that accounting is a body of knowledge, while science is taken from the Latin word *scientia*, which literally means knowledge.

Sund and Trowbribe formulated science as a collection of knowledge and processes while Kuslan Stone stated that science is a collection of knowledge and ways to obtain and use that knowledge and science is a product and process that cannot be separated. Real science is both product and process, based on some of the above definitions Science can be defined as knowledge to explain and predict natural and social phenomena as they are with the scientific method, propose and establish the truth of explanations or statements about a problem. The goal of science is to produce useful models of reality.

Thomas Kuhn's 1962 book *The Structure of Scientific Revolutions* is a much better-known analysis of the scientific process. Noticing that the path of scientific knowledge from, say, Aristotle to Newton to Einstein is not a straight one—not just a matter of accumulating more facts—Kuhn posited that scientific “progress” was actually a series of “revolutions” or changes of fundamental worldview. A scientific revolution or change of scientific worldview is, in Kuhn's words, a shift of paradigm. A paradigm for Kuhn is more than a theory; it is the context of ideas that makes a theory possible and sensible. At any given moment, scientists, he asserted, operate within a particular paradigm. A paradigm is a model of reality at the fundamental scale, shared ideas about what kinds of things exist and their qualities and characteristics. Even more, a paradigm carries with it a set of methods and practices, including tools and instruments.

The influence of the philosopher of science Karl Popper argued that science is unique in the thinking system because it provides statements that can be checked and tampered with. If the statement is unverifiable and potentially tampered, it is not scientific by definition.

Alfred Schutz reasoned, is that the natural sciences “have brought about such magnificent results” (1954: 257), and there can be no doubt that science has achieved great things and answered many previously unanswered (and even unasked) questions.

Basically, modern science is characterized by two important terms: law and cause. Science clearly seeks to discover facts, but facts are part of a much more ambitious project to identify and identify "laws of nature." The laws of science (as opposed to politics and law) are, ideally in mathematical form, a description of the manipulation of phenomena or the relationships between them. A "cause"

in science refers to the required (ideally mathematically specifiable) relationship between two variables or events.

In the main textbooks of the Social Sciences, John and Erna Perry stated that the purpose of the Social Sciences is to systematize all aspects of the Human Condition and Behaviour, using methodologies borrowed as much as possible from physical sciences. (2012: 2).

Physical accounting refers to the natural resource and environmental accounting of stocks and changes in stocks in physical (non—monetary) units, for example, weight, area or number. Qualitative measures, expressed in terms of quality classes, types of uses or ecosystem characteristics, may supplement quantitative measures. The combined changes in asset quality and quantity are called volume changes.

3. METHODS

This article is a descriptive study to explain accounting as science. This study is also trying to describe parallel between physical and social sciences and accounting.

Literature research is used as the method of data collection. That is, it searches for literature containing theory from both published and unpublished hard-copy or soft-copy scientific papers in books, articles, and online journals.

4. RESULTS DAN DISCUSSION

4.1. RESULT

Is Accounting a natural science or a social science? Accounting is included in the category of social science, namely as a science that grows and develops in an open social organization environment. This is in accordance with the definition of accounting according to Mautz (1963) Accounting deals with companies, which are social groups; accounting deals with transactions and other economic events that have social consequences and affect social relations; accounting produces useful and meaningful knowledge for humans who are involved in activities that have social implications; accounting is primarily mental. On the basis of these available guidelines, accounting is a social science.

Accounting is in the circle (domain) of life interactions between humans or groups of people in everyday life. Therefore, accounting science also develops in line with the development of human culture. interaction between humans or human groups is created because: (1) the mechanism for exchanging interests, (2) the need for rules of the game, (3) individual or group attitudes and behavior, (4) the value system of a group of people and (5) social life anomalies. These five things form various sciences including the disciplines of economics, law, psychology, social, philosophy, literature and culture. Social science disciplines are certainly different from other disciplines, such as the disciplines of mathematics, physics, technology, biology and medicine. The discipline explains natural phenomena that affect human life and how humans interact with nature that includes them. the values of the discipline are formed from a set of theories that are naturally shaped by the universe. This is actually different from social science which is formed by interactions between humans or groups of humans which actually does not contain an element of

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certainty but only a constancy. Thus the value contained in the disciplines of the social sciences is the constancy formed by the interaction between humans or human groups.

Accounting as a multi-paradigm social science. The term paradigm was first introduced by Thomas Kuhn in his book *The Structure of Scientific Revolution* (1962). He stated that paradigm is a key terminology in the development of science, although in his book he invited many criticisms about the differences and inconsistencies in the use of the term paradigm, Kuhn corrected it in the second edition of the book. Kuhn's main goal was to challenge generally accepted assumptions among scientists about the development of science. Scientists generally hold that the development or progress of science occurs cumulatively. The essence of Kuhn's thesis is that the development of science does not occur cumulatively but occurs in a revolutionary way.

Michael C. Jensen (1983) a well-known scientist from Harvard Business School in his interesting writings in the journal *The Accounting Review*, Volume LVIII, issue 2, 1983 with the title *Organization Theory and Methodology* believes that accounting is an integral part of an organization, then with such rapid developments in accounting theory, it is very inappropriate for accountants to just let the hustle and bustle of the development of organizational theory go. According to his argument accounting is an integral part of the structure of every organization, and a fundamental understanding of why accounting practices evolve as they do and how to improve them requires a deeper understanding about organizations than now exists in the social sciences (Jensen, 1983).

In addition, Covalleski and Aiken (1986) argue that including accounting theory as a basic theory in accounting research will increase the relevance of accounting research findings considering that the place where accounting is practiced, for example in the form of an accounting system or control, is within the organization. They also add that organizational studies are also a sociological area so that it is able to relate accounting aspects from the micro, meso and macro levels at once, although sociological theories seem to be a little more related to accounting than knowledge that is in the domain of applied organization studies.

Accounting encounters two important terms in modern science: law and cause. Since law and accounting are mathematical forms, accounting equations are known that the total assets of a company are equal to the sum of liabilities and capital. And there is a relationship between assets, liabilities, and capital.

The definition of science includes the acquisition of knowledge through research, practice, research, and careful observation. This usually involves true legal knowledge, especially through trial and error, such as application of scientific method. Accounting definitions also include observation, investigation, and identification by test and investigation methods for inferring data. Extensive research and training required to make hypotheses in both science and accounting. After careful research, documentation, and research, experts make conclusions and judgments on both science and accounting. In accounting, book entries are a recognized way to collect and classify data in a logical and persistent format.

For a long time, scientist regarded accounting as an information model that only reflected economic reality in the indicators of the financial statements, based on the use of certain abstract

mathematical models and rules. However, since the late 1970s, thanks to the work of positivist-oriented scientist, accounting has been regarded as for social relations.

Miller (1994) states:

"Accounting today can be seen as the type of world we live in, the type of social reality we live in, a set of practices that change our way of choices open to businesses undertakings and individuals, it affects how we manage and organize different types of activities and processes, and how we manage the lives of others and ourselves."

Thinking of accounting as one of the social sciences, it must be remembered that the social sciences are sciences that study different aspects of how society works. Where physics studies the most common and basic laws governing the structure and development of the physical world, social science studies the laws of social functioning and the relationships between people. The social environment is the subject of scientific research in the same social sciences as the material world is in physics. Based on the above understanding of social science and the understanding of accounting practice as a social phenomenon, accounting science (as social science) is theoretical and about how accounting works. It's not just about the methodological aspect but also investigates the relationships that arise between people (Accounting Information Generation entities and its users) in relation to the functionality of such a system both within the company and outside its boundaries.

Accounting is considered as a social science for the following reasons: it is organized and performed by people, and interactions with other members of the company can determine the outcome of the functioning of the company's accounting system., it is organized and maintained to provide unique information to people (internal users) for administrative decision making, and it affects the behaviour of external users of accounting information.

For the above reasons, accounting is considered a social science, so it is possible to distinguish between two aspects. The first aspect relates to the activities of the accountant in identifying, measuring, registration, systematizing, processing, and presenting of information as a member of a society that interacts with others. Such interaction influences the choice of alternative accounting method when exercising the accountant's expert's judgment. The second aspect relates to the effect of disclosing the accounting information to the user of the accounting information, particularly to the user who is a member of the society.

Meanwhile, the essence of environmental stewardship and transparency is that environmental issues are too complex and important to be completely in the hands of companies that are already overwhelmed. Not only is it unreasonable to ask companies to make more decisions about our future, but no one has the information to make such decisions in their own "reasonable" way. Moreover, it seems difficult to deny that those affected by environmental measures have the right to be informed about these measures.

4.2. DISCUSSION

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The open question in the context of accounting as social science in two aspects are: first is the identification of motivations and psychological factors that influenced the implementation of accounting choices from alternatives presented in the regulatory document, and the means to minimize opportunism behaviour of the subject in making such a selection. The second aspect is the determination of the existence of accounting decision for social structures, social groups, and individual members of society, and the prediction of alternative outcomes.

Based on some of the statements above, we can get a picture that first; the domain in which accounting is practiced is organization, second; the constellation of studies on organizations is in the area of social sciences, so accounting studies that are mono paradigmatic or single perspective are difficult to be accepted scientifically. third; the view that the study of accounting problems can only be solved using economics is narrow because many problems in organizations are not only solved by economics but can take advantage of psychology and sociology. Conditions like this are not extraordinary, and only occur in the area of accounting science, but are conditions that are very common in the development of the scientific world in general, namely when the parent of a scientific discipline changes, the branches of the discipline or the technology based on that discipline will also change. The idea of accounting as a multi paradigmatic science is not a new idea, maybe even an idea that is currently limited to the realm of sociology. when viewed in Anthony Hopwood's article which appeared *The Accounting Review* Volume 85 Issue No.2 with the title *Whither Accounting Research?* (Hopwood, 2007), the idea had developed in the Accounting Department at Chicago University in the late 1960s. where the works of a number of prominent accountants who were still students at that time such as Joel Demski, Philip Brown, Ray Ball, Ross Watts and others where the efforts of interdisciplinary studies have been felt. This historical fact wants to emphasize that accounting is a multiple-paradigm science and not a single paradigm of science. Behavioural Accounting as the first Interdisciplinary for Accounting. Efforts to see accounting through a psychological perspective, especially social and organizational, are evidenced by the emergence of interdisciplinary accounting research. one of them is behavioural accounting, which aims to improve better accounting practices, especially in large-scale organizations or companies. Behavioural accounting also teaches every member of the organization about non-technical aspects of real life of the organization for career development (Argyris, 1952).

To produce accounting information that is useful for internal and external parties of the organization, it takes motivation and behaviour from implementing information systems. The emergence and development of behavioural accounting is due to the fact that accounting is simultaneously confronted with the social sciences as a whole. Behavioural accounting uses behavioural science methodologies to complete the information picture by measuring and reporting on the human factors that influence business decisions and their results. Behavioural accounting provides a framework that is based on the following techniques: 1. To understand and measure the impact of business processes on people and company performance 2. To measure and report behaviours and opinions relevant to strategic planning The sociological perspective in accounting Burell & Morgan (1979) can be said to be the foundation for systematic categorization from a sociological perspective in assessment of organizational matters including accounting. The contribution of Burell & Morgan (1979) is not only in the form of an easy way for researchers to map based on a sociological perspective or paradigm on various theories or results of

organizational research (including accounting) that has been carried out, but at the same time providing enlightenment in the form of potential research space open scientific.

Roslender (1992) continued what was pioneered by Burell & Morgan (1979) by writing a special book discussing modern accounting from a sociological perspective. although they differ in categorizing their sociological perspectives, it can be said that the two taxonomies are also similar in the same respects, namely using a bipolar continuum approach for two things that we want to use as the basis for categorizing. Burell & Morgan's (1979) Quadran model is built on two independent dimensions that are based on assumptions about the nature of social science and society. Furthermore, the dimensions of social science are divided into four interrelated elements, namely ontology, epistemology, nature and basic human characteristics and methodology. In 1985 Hopper and Powell tried to develop a classification from a sociological perspective to study organizational problems. they recognize three positive, interpretive and critical perspectives.

Based on the arguments presented by the accounting experts above, it can be said that they do not object to the suggestions presented by Jensen (1983), because the place where accounting is applied is the organization so that the neglect of the accounting discipline on the relevance of accounting theory and its development is something that is detrimental to the discipline. own accounting.

In accounting (Chua, 1986) divides it into three paradigms, namely positive, interpretive and critical paradigms. and currently in accounting has also developed what is called the postmodern paradigm. The paradigm built by Chua (1986) is a multiparadigm-based science. the above paradigms can be applied holistically without sorting out which one is the best among the paradigms. This means that in order to understand the reality of accounting practice, we can look at it from various perspectives (multiparadigm). With the existence of multi-paradigm-based science, all problems in the development of science, especially the development of accounting practices, can be solved with various views, not just one view. a problem in science that is only solved with one view may be considered correct in that view, but perhaps according to the views of others the problem cannot be solved. The importance of the main foundation in multi-paradigm thinking is to believe in the existence of relative truth. With the development of multi-paradigm-based accounting practices, the existing paradigms will not trip over each other or declare that I am the most suitable paradigm by eliminating the other paradigms. it would be better if all paradigms interact or synergize to produce a power.

In this paper, the author tries to provide an overview of the paradigms in accounting based on the findings (Chua, 1986), as well as the postmodern paradigm, but it does not become a material for comparison between one paradigm and another. Positive Paradigm Positive Paradigm or also known as functionalist paradigm (mainstream) aims to explain and predict an event. Therefore, this paradigm rests on a very strong mechanistic (cause/effect) relationship. Science is crowned with objectivity. Human nature is deterministic (as opposed to the critical/interpretive paradigm which tends to be voluntaristic). Research in this paradigm always tries to make accurate measurements through an instrument called a questionnaire on the social reality under study. see reality as a material that can be measured and interpreted rationally, or the only one to build knowledge. Interpretivism paradigm is a perspective that is based on the goal to understand and explain the social world of the people involved in it. Therefore, the science, as explained by Burrell

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and Morgan (1979), lies in the ontology of voluntaristic human nature. Subjectivity actually plays an important role compared to objectivity (as found in the functionalist/positivistic paradigm). Accounting research using this paradigm aims to understand accounting phenomena/accounting practices from the perspective of actors (accountants/auditors, etc.). Critical Paradigm Critical Paradigm, as opposed to positivism, in seeing reality. in the positive paradigm, Fakih (2002) who interprets the thoughts of Jurgen Habermas, that the highest reality is not an external reality that can be seen by the senses, but rather on the spirit or idea, social science is more understood as a catalytic process to liberate humans from all injustice, should not and should not may be neutral. The critical paradigm on the other hand strives for a holistic approach, and avoids deterministic and reductionistic ways of thinking. therefore, they always see social reality from a historical perspective. Critical paradigm aims to liberate / emancipate and change. This paradigm rests on the perspective that society is in an alienated condition. They live in an ideological oppression which in the context of its liberation requires a movement of consciousness. Burrell and Morgan (1979) divide this paradigm into Radical Humanist and Radical Structuralist. Radical Humanists view that change is made through consciousness, while Radical Structuralism views that change can be made through changes in the structure or system. Critical accounting research uses critical theory to derive research methods. Western Critical Theory that is used as a reference generally comes from the Frankfurt School: Horkheimer, Habermas, Althusser and others. Postmodern Paradigm The postmodernist paradigm aims to deconstruct, that is, to incorporate thoughts/ideas/concepts that are usually marginalized into the main discourse (logocentric) to deny a single truth. According to Rosenau (1992:15) there are two schools of postmodernism, namely the sceptical flow and the affirmative flow. Scepticism is characterized by being pessimistic, negative, gloomy assessment, seeing that the postmodern era has been fragmented, disintegrating, malaise, meaningless, loss of parameters, morals and chaotic society usually rejects all truth because truth is formed and its validity can easily be thwarted. While the affirmative flow still has a more constructive view. Academic studies usually enter the flow of affirmative postmodernism. postmodernist accounting research may dwell on the image of accounting, for example the image of profit, etc.

About environmental accounting, it is convenient to think of the environment, which is the three possible "hue" states of the physical environment, as a "mode", important but non-important environment ("light green" position) and endangered environment ("dark green" position). Only one of these positions is the "true" position, but unfortunately there is no doubt what this is. Therefore, the meaning of the opinion., there are three possible answers to your business. Do nothing and hope everything is gone; follow the law and public opinion (strategic and business-oriented position, that is, environmental management); or seek a sustainable way of working (environment - centred position, that is, strive for sustainable development).

5. CONCLUSION

To understand accounting as a social science, think of accounting as a science and virtually interpret a set of principles, methods, laws, and system mechanisms that generate information for management decision-making. You have to do consider it also as a science that studies the relationship that creates between a social group and its members through the use and action of information generated by the accounting system.

Accounting should be seen not only as a tool to reflect the economic reality of companies, but also as a tool to form the social processes and relationships that result from accounting acting as a separate socio-economic institution. is. The social thing itself is the shape of reality.

Accounting is categorized as a social science, because accounting grows and develops in an open social organizational environment. Because accounting interacts between humans or groups of people in daily life, accounting also develops in line with the development of human culture. The development of accounting practice cannot be separated from the increasing understanding of accounting science. Positive accounting theory which still dominates accounting research has received sharp criticism because according to this theory, accounting is said to be value free. Accounting cannot be said to be value-free because accounting grows and develops in organizations where the organization is in a society full of uncertainty (Azmi & Nasution., 2018). On this criticism emerged a sociological approach that is conditional with values. Science that continues to develop, in fact continues to influence accounting in the social sciences with the emergence of various perspectives on accounting known as paradigms. The interdisciplinary perspective in accounting can be seen with the emergence of Behavioural Accounting which aims to promote better accounting practices and teach organizational members about nontechnical aspects of real live organizations for their career development. Besides that, Sociology as an interdisciplinary accounting has also experienced developments with the emergence of various views such as functionalist views, interpretive views, and critical theory.

If organization does not hesitate to collect and publish such data on environmental accounting, the question of how this environmental stewardship and information type is needed can easily be resolved.

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