International Journal of Latest Research in Humanities and Social Science (IJLRHSS)
Volume 04 - Issue 01, 2021
www.ijlrhss.com || PP. 01-07

Accountancy Information System for Sustainable Future

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Abstract: Author discusses accountancy in its broader meaning and the basis of accountancy theory is proposed. He transforms the notion of sustainable future to sustainable society that has more telling meaning. A sustainable triangle is created for illustrating interwoven relationship among sustainable society, social responsibility, and informational system that encompasses also accountancy system. A sustainable pyramid is given to illustrate the position of well-being in relation to sustainable triangle. In this way a role of accountancy is emphasized as well.

Keywords: accountancy, social responsibility, sustainable future, sustainable society, valueadded, sustainable triangle.

1. Introduction

To discuss the role of accountancy in an information system from sustainable future point of view, a comprehensive accountancy theory should be defined. This is important, because in history and also in the recent literature, there are several attempts to formulate an accounting theory that do not meet the requirements to be an efficient support to efforts for sustainable future.

The need for accounting theory was perceived relatively early (e.g. McCredie, 1957 and Hopwood, 1987, p. 210). Its development is addressed by the authors (e.g. Godfrey *et al.*, 2010) through typical periods: "pragmatic accounting" (1800-1955), normative accounting (1956-1970), "positive accounting" (1970-2000).

In next years, accounting theory has taken different approaches. "In particular, the professionals sought normative theories to unify accounting practice and make it more homogeneous, whereas academic researchers have sought to better understand the role and impact of different forms of accounting information." (Godfrey *et al.*, 2010, p. 13). These two approaches are compatible in general, because positive theory can help provide an understanding of the role of accounting while normative theories can improve the practice of accounting. But still, many normative theorists do not accept the value of positive accounting research (e.g. Tinker, Puxty, 1995, p. 7, Godfrey *et al.*, 2010, p. 29). The need for a single, consistent conceptual framework has soon gained quite widespread acceptance (e.g. Kempner, Jack, 1968, p.1, Hopwood, 1987, 232, Miller, 1998, 619, and Jones, 2015, p. 2). Nevertheless, there were and they can be found also today, severe critics and appeals for further improvement about the proposed approaches (e.g. Hines, 1989 and 1992, 87, Montagna, 1991, 98, Unegbu, 2014, p. 13, Oldroyd*et al.*, 2015, Richard, 2015, p. 30). In last five years it is not possible to find some additional important contributions to the development of accounting theory. Even more, there are some important books named Accounting Theory, but almost all of them mention the theory only in an introduction and avoid its definition or deeper discussion. Classical example is Scott's monography *Financial Accounting Theory*(Scott, O'Brien, 2019). Scott and O'Brien see the fundamental problem of financial accounting theory "how to design and implement the concepts and standards that best combine two competing roles for accounting information: informing investors and improving efficiency by motivating and evaluating manager performance" (Scott, O'Brien, 2019, p. 25). It means that there are two different groups of interests even in enterprises. They of course require some different information. Such statement shows that the recent accounting theory is really in a blind alley.

Among the first more radical authors is probably Al-Adem, who emphasizes the findings of his research, in particular the following (Al-Adem, 2010, 125):

1. The diminishing level of published papers to advance accounting theory.
2. The decrease of accounting theory topics, while the use of the empirical archival method, the influence of economic and finance disciplines, and financial accounting topics increased.
3. The focus on a scientific approach to academic accounting research has restricted the development of accounting theory.
4. The increase of empirical research became the dominant base for judging claims for knowledge, causes other research to be ignored. They are unlikely to have a place in important accounting reviews. Faculty members in business fields, including accounting, are discouraged from working on such articles.

5. Questions about the normative topics that contribute to building a general accounting theory are ignored.
6. It appears that accounting academics use empiricism in a narrow way. A discipline overly exposed to empiricism may subject itself to the need to borrow theories from other disciplines. The tendency toward doing such empirical studies is connected with utilizing theories (methodologies, models) from economics and finance.[1] In this way these theories become the theoretical foundations for accounting theory.
7. Restricting the theoretical foundation in accounting academia has placed accounting in a ”subservient” position to economics. The excessive citing from economic and finance sources makes the contents of accounting knowledge published in accounting journals to a large extent not different from those in economic and finance journals. The number of empirical studies that can be classified as financial accounting papers increased, the number of papers about accounting theory decreased.
8. The heavy importation of theories and models from the economics and finance disciplines has created a dominant school of accounting research that is dependent on economics and finance based theories and methodologies. Some examples about predicting economic or financial events (e.g. Altman model, bond-rating models, *CAPM* model) are still to be found also in 2012 (e.g. Riahi-Belkaoui, 2012, pp. 363–433).
9. Positive accounting research has rejected normative theorizing in accounting, claiming that the proposed normative accounting theories serve as excuses for policy makers.
10. The mainstream accounting researchers lack knowledge in other fields outside of economics and finance that prevents accounting research from benefiting from other branches of knowledge.
11. The schism between accounting academics and accounting practitioners broadened. What is considered empirical accounting research lies outside the domain of accounting practice and such results can be understood mostly by “elite” researchers.

All above findings are supported by cited author's research and relevant citations of professional literature. General accounting theory remains neglected. Next radical author is probably Richard (2014), who stated that evolution of accounting goes in a dangerous direction. This process has permitted an unbridled acceleration of profit recognition which contributed significantly to financial crises manifestation. Jones concluded that “accounting reports do not impartially mirror economic events: they reproduce and legitimize dominant power relations in society” (Jones, 2015, p. 464). He asked himself: what about the future of financial accounting theory? (Jones, 2015, p. 156). With emphasizing the importance of this question he leaves it open, without a clear answer.Open questions in the accounting theory and its radical critics indicate the need for a different approach to build more consistent and useful theory.

2. Accountancy theory

Adifferent approach is possible through better definition of accountancy that encompasses accounting and also management in accountancy. Accounting is therefore a subset of accountancy (Bergant, 2020). Next step is a recognition that accountancy is normally the mostimportant part of information system in every business system,because it provides summaries and synergies of data and information from, and about, all activities in the organization and its critical environment. This means that it must be focused on the fundamental objective of the business system. Such an objective is a surplus value added according to value-added law (Bergant, 2017). It means that business information system should measure and monitor the states and trends of surplus value added as a main information for reporting about effectiveness and performance of an organization. The third step is to recognize three main areasof accountancy: accounting process, management in accountancy, and assets that are used to support the system. They are illustrated in Figure 1.

[1] A good example of this phenomenon is the recent use of securities market model, agency theory, and stock valuation in dealing with accounting theory (Scott, O'Brien, 2019, p. 393). Even more, the critics of different accounting approaches (or theories) research their usefulness using economic and financial models and concepts (e.g. Godfrey *et al.*, 2010, pp. 394–396).

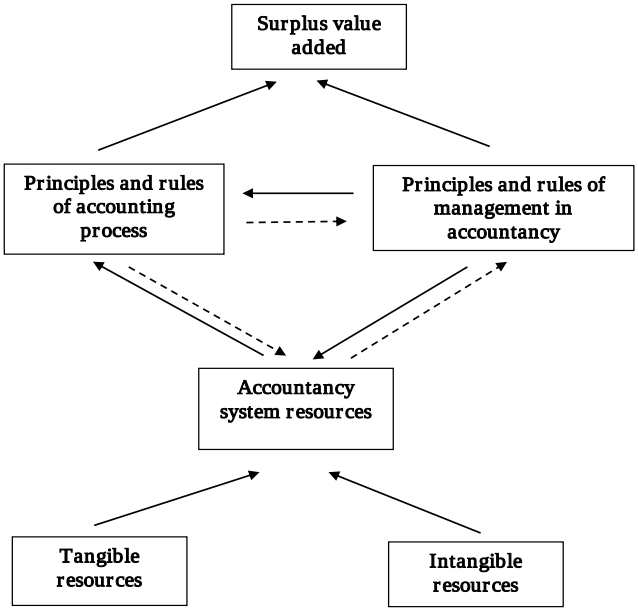

Figure 1: Basic areas of accountancy theory

The area of principles and rules of accounting process encompasses the main accounting concepts as (Kempner, 1968): entity as a single of business organization, double entry system, going concern, historical cost, and accrual concept. Of course, the statement of surplus value added should be added as well. It means that this area is no more (or should not be) ruled totally by actual accounting standards that follow already obsolete principle of profit as a main category. The area of principles and rules of accounting process should generate the basic information about surplus value added or lost.

The area of principles and rules of management in accountancy in principle encompasses all classical principles of management that are applicable in accountancy system. First of all, here are included management functions as planning, organizing and controlling. In this framework, ethical behavior, risk management and strategic focus in sustainable future are emphasized. All these activities are oriented to effective management of accounting process to ensure true and fair information about surplus value addedin a timely manner.

These two areas above are discussed in more details last year (Bergant, 2020).

The area of accountancy system resourc*es* encompasses tangible (e.g. fixed assets with hardware and communication equipment), intangible assets (e.g. software, data-ware, licenses and patents). This area supports the efficiency of accounting process to achieve its goals. Therefore, there is also an urgent need for data science and analytic skills of accountants (Gould, 2019).

Huge importance of information-communication technology for information system is shown especially through:

- Improving quality of information that stems from: faster data processing, less mistakes, traceability of procedures, better archiving, better and faster data insight, better quality of analyzing (business intelligence), better communication and reporting, better organization system, possibility of standardization, rationalization, faster updating, implementation of e-business, etc.
- Providing additional possible information, due to business growth and better risk management.
- Providing new sort of information, based on the possibilities, raised on the development of information technology itself.
- Providing better accessibility to external data for benchmarking, external reporting and better communication to business stakeholders and partners.

All three areas of accountancy in Figure 1 are directed to surplus value added and closely interlinked. Accounting process needs computer support and maintenance, but also has a reciprocal effect on the development of computer equipment. Management takes care of the development and maintenance of information system resources, but also receives information about its additional capabilities and the possibility of developing new or higher quality information. Management directs and controls the operation of the accounting process, but also receives initiatives from it for more efficient operation or solving possible

problems. Theserelations are shown by the dashed lines in Figure 1, thus forming a comprehensive accountancy system. Therefore, accountancy theory must consider all three areas and also their connectedness.

The accountancy theory concept from Figure 1 broadens the area of subject. This allows a comprehensive view that requires interdisciplinary approach. Accounting is therefore not only a craft of bookkeeping and reporting, but also a demanding scientific field with a significant impact on the development and operation of society as a whole. This impact is based on the fact that organizations, individuals and society as a whole make their decisions and behave not only instinctively, but to a significant extent on the basis of information.

This concept has an important impact on other disciplines. In the field of economics and finance, several already traditional models should be amended, supplemented or even omitted. For example: operational leverage, the role of margin, criteria of organization's performance and corporate governance, the role of capital market, evaluation of the value of shares and of the value of a firm equity, risk management, capital asset pricing model (*CAPM*), weighted average cost of capital (*WACC*) financial leverage, economic value added (*EVA*), signaling theory, and theories of optimal financial structure (Bergant, 2014).

Such a concept of accountancy theory can no longer be blamed for importing models from economics and finance (e.g. Al-Adeem, 2010, p. 127), but vice versa. It offers a major impact on economic and financial thought, enabling new directions of research and development. Special importance may be devoted to changes of certain criteria in further empirical researching of economic or financial subjects.

The above concept may have an important impact on the selection of proper criteria of significance in further empirical researches. At the same time, it allows and enhances new possible directions of empirical and theoretical research.

3. The role of accountancy in a sustainable future

Firstly it is necessary to change the notions***sustainable developmentand sustainablefuture*** **to *sustainablesociety***. This notion better reflects an objective and its content that is not postponed to not exactly defined future but is understandable and means a better starting point to measure one's achievements. Beside, such a notion matches the basic human need (existence of an individual) that is the fundamental starting point of the value-added law. Namely, sustainable society can be defined as a synergy of all people with their needs and includes all synergies based on their interdependence and cooperation. At the same time, it includes a precondition of sustainability that means also appropriate safeness for people.

In short, a sustainable society is not a ”no-growth” society – it is rather a society that recognizes the limits of growth and looks for alternative means of improvement. Human development is not about having more, but about being more. It means a quality of life instead of the quantity of things (Mulej, 2020). “What really counts in life money can’t buy” (Hoffer, 2020).

Secondly, it is necessary to consider that every objective has three dimensions: its *setting* after appropriate discussion (governmental and/or managerial aspect), *criteria* of appropriate decisions and performance (analytical aspect) and *information* that allow monitoring the achievements (information aspect).It can be illustrated for the purpose of sustainable society as a*sustainability triangle*that isshown in Figure 2.

Sustainable society on the *top of the triangle* is a final consensus in the society about its fundamental objective. It is also a moving goal that follows changes in a society.It is ahorizontal goal that suits to big majority of society members due to its characteristics (ŠarotarŽižek, Mulej, 2020).

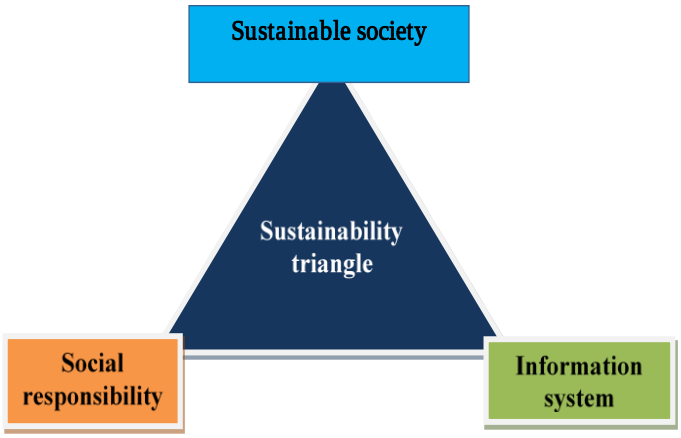

Figure2: Sustainable triangle

The adopted objective requires the definition of a *criterion* that notes the situation in relation to the goal and thus provides a basis for appropriate planning, decision-making and behavior of members of society.The main criterion for achieving the sustainable society and identification of its effectiveness is *social responsibility* that according to its fundamental definition reflects in contributions of individuals and organizations of all forms and levels to the well-being of the whole society.[2]This second aspect shows that a criterion and a precondition for sustainable society are important characteristics of social responsibility, which can be defined also in this way. Determining the criteria in more detail is a common task of the user and the analyst, but it must be based on the added value, tobe requisitely holistic. In the opposite case (e.g. profit based), an entropy increases as result of value added law.

The third corner of the triangle means the information system that is relevant for the design and implementation of the strategy to achieve the objective and which shows and explains the deviations of the planned goals. Every information system is "a source of power" and have a crucial role on all decisions, activities, and the development of democratic society. It includes also non-financial information (e.g. Baumùller, Schaffhauser, 2018). The main important part of such information system is of course accountancy that is presented in the previous section. It can be seen from Figure 1 that accountancy is, as a source and reflection of social responsibility, also a prerequisite for achieving sustainable society, because of deriving and developing relevant information for decision-making. It is also shown in Figure 2. The role of the head of accountancy is therefore similar to that of a navigator on board of a ship on the high seas.

Relevant information is intended for:

1. management of organization for:
   - decisions at all levels of organization, business functions and responsibility centers to achieve business goals;
   - internal governance bodies (e.g. employee ownership);
   - measuring organization's performance for the needs of motivation system;
   - measuring organization's social value (e.g. Eurodiaconia, 2016);
   - prevention of fraud and assets protection;
2. Other internal users (e.g. internal control bodies, employees and unions).
3. External users (e.g. ownership bodies, investors, creditors and business partners, state authorities).

Each of the three aspects presented in Figure 2 represents a specific area of topics that are closely related to each other, but each area has its own logic and thus its own way of development. A harmony among these three aspects represents *an ideal of sustainable society*. Sustainability triangle illustrates a harmony of relationships among its angles; therefore, it is an equilateral triangle.

This ideal position presents an ultimate objective of human activities on a long-term and should be continuously implemented and maintained. Activities that cause or increase a disharmony in the sustainable triangle can be assumed as not socially responsible.

The sustainability triangle can be viewed also as the underside (foundation) of the *sustainable pyramid.* The top of pyramid represents the main characteristic of social society: social well-being as an ultimate goal that is supported through implementing and maintaining the sustainability triangle.[3]In a sustainable society, social capital produces positive consequences[4] that are beneficial to social well-being (Son, 2020, p. 165). For individual person the top of pyramid can be the feeling of happiness or satisfaction.The interior of the sustainable pyramid is subject to constant changes and entropy processes. All human actions should be aimed at striving to use the synergies to establish and maintain harmony within the sustainable triangle. In this way, we would also improve the level of well-being of society.

Figure 2 shows also a position and most important role of accountancy in supporting activities of all organizations to function according to corporate social responsibility and thus considering fundamental principles and achieving goals of sustainable society.

Accountancy, on the one hand, derives from the basic needs of people (value-added law), and on the other hand, by information providing, enables appropriate decision-making to meet these needs. This means that accountancy as a theory and practice is woven into the foundations of the philosophical, psychological,

[2] More about well-being metrics in Stiglitz *at al.* (2018).
[3] In Christian religion, the sustainable pyramid can be compared by the doctrine of the Holy Trinity (Father, Son and Holy Spirit) as three persons in one Godhead.
[4] Social capital can produce also negative consequences (Son, 2020, p. 161).

sociological, and other social sciences. Hence is derived the great (social) responsibility of accountancy theory as a science and at the same time the (social) responsibility of accountancy professionals in practice.

4. Conclusion

The presented concept of accountancy changes our view of the world, which means that it has not only sociological, but also its own philosophical and psychological dimensions that come from ethical dimension of the value-added law. In this way it emphasizes the importance of human society as a whole. Recognizing this role of accountancy is the first important stage in its development into a relevant, socially engaged science that is an indispensable building block of sustainable society.

This means in particular the following:

1) Accountancy in an organization has a broader scope than it is commonly discussed.
2) Accountancy is not, cannot be and should not be, a neutral science because it directly influences decision-making. Decisions should consider long-term goals and social responsibility of all types of organizations.
3) An important driver of accountancy development is information-communication technology that continually allows providing better and new information. In this way, its relevant role in the process achieving sustainable society can be appreciated.
4) Managing in accountancy must be socially responsible, with the corresponding consequences for professionals and experts as individuals as well.

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