

# THE ESSENTIALS OF STUDIES ON IT AND MANAGEMENT ACCOUNTING

Fitri Purnamasari  
Universitas Negeri Malang, Indonesia  
fitri.purnamasari.fe@um.ac.id

Sheila Febriani Putri  
Universitas Negeri Malang, Indonesia

Nurul Azizah  
Universitas Wijaya Kusuma Surabaya, Indonesia

## ABSTRACT

As computerized systems are increasingly being used including in every aspects, there are various interesting topics that can be taken and developed by subsequent researchers related to the phenomena. This paper seeks to help researchers by presenting summaries, quotations and comparisons of some studies related to the role and needs/urgency of information technology adaptation especially in management accounting area. The role and urgency of information technology in management accounting can be reviewed in various contexts; such as business and education contexts. Besides, the review process also can be carried out through research with various methods. Researchers need to design and map the objectives of the research to be taken clearly, then choose the appropriate method for realizing the goal.

**Keywords:** Information Technology, Literature Study, Management Accounting, Technology Adaptation

## INTRODUCTION

Information technology as well as accounting standards have one thing in common; they both keep changing overtime. The difference lies in the frequency; technological change is more rapid and intense than accounting standards (Moorthy, et al., 2012). Discussions on these topics are indeed interesting, given the progress of information technology is increasingly developed and raises the needs for competitive advantage for both companies and individuals.

The use of computerized systems is now a must in accounting field; including in financial and management accounting. It can also be said as an enhancer of the points of competitive advantage. If it is associated with existing studies, most researchers are really focused on emphasizing the benefits of information technology in management accounting systems in certain industrial organizations or companies. But actually, there are plenty of other contexts that can be discussed related to this topic. Some of them are for example can be seen in the education context—such as the need for technological-based curriculum on management accounting learning, while the others are related to the rising phenomena (like the rise of ASEAN Economic Community in several countries, including Indonesia).

Although specifically the studies related to the topic of information technology and management accounting have already been carried out by so many researchers, this topic is still in the exploration stage (Strauss, Kristandl & Quinn, 2015). One of the methods that has been used in those studies is literature study. The others are also relied on data secondary (through interviewing and distributing questionnaires), and mixed methods. The mixed methods were also selected by researchers for this interesting topic, because the results and depth of

findings that could eventually be obtained are more than using just one method only.

As stated earlier, the development of research on the combination of information technology and management accounting is considered by researchers to be fully open and necessary, considering the references and empirical tests are still in the exploratory category. Therefore, the literature study in this paper will help further researchers in mapping, replicating or adapting previous research contexts and methods to be specifically adapted in Indonesia.

## **RESEARCHES ON THE ROLE AND URGENCY OF INFORMATION TECHNOLOGY IN MANAGEMENT ACCOUNTING**

When analyzing researches related to this topic, we found some facts about the tendency on the use of literature study methods, followed by the use of mixed methods between quantitative and qualitative methods. Each research has its own research context, but the use of literature study methods was also chosen by previous researchers to open new theories and assumptions about the topic of information technology in management accounting, so it can be used as a main basis for subsequent empirical tests in related contexts. The following will be discussed further below.

### **1. Use of Literature Study Methods**

Previous researchers who used this method had the purpose of expressing their research ideas and objectives by collecting various literatures and data that supported the discussion, without conducting empirical testing. Generally, researchers do intend to open the way for the next researcher to examine deeper about the context, so that it can be used as an additional literature when the theory-testing will be carried out.

This method is used by several researchers such as Moorthy, et al. (2012), Khajavi & Nazemi (2006), Spraakman (2010) and Maharsi (2000). Moorthy, et al. (2012) in this case testing the application of information technology on decision making in management accounting context. In their research, this method can be used to reveal the differences in management accounting approaches traditionally and in a modern way (when adopting the use of information technology), reviewing the potential application of information technology along with the benefits and impacts of such applications. Moorthy, et al. (2012) relied on observations on pre-existing literature and concluded that the use of information technology will simplify the calculation processes that take place in the company's operations, and be able to help present more effective business data. They also quote that from the results of data collection, information technology will generally improve the efficient work of accounting division of the company, and produce outputs with efforts that are not excessive, timely, and accurate, so that good decision making (in management accounting) can also be achieved.

The literature study method is also being used by Khajavi & Nazemi (2006) to create a combination model of management accounting techniques that should be applied to big companies. In his essay entitled "Innovation in Management Accounting: The Needs of World-Class Firms", Khajavi & Nazemi (2006) collected various journals and related literature to encourage corporate management accounting to adapt the latest and modern techniques (that is information technology). They also cited several conclusions of the study by Jazayeri and Hoper (1998). One of these conclusions includes an emphasis on the role of advanced information technology for companies that want to achieve world-class standards. This is because the nature of the information itself is very important for management, and with the new technology, the process of collecting, converting and utilizing this information will greatly facilitate management.

Apart from the business context, the use of literature study methods in reviewing information technology topics in management accounting was also adapted in the context of education, especially in the criticism of teaching curriculum in management accounting courses. Spraakman revealed in his 2010 work entitled "Crisis in Management Accounting Curricula: The Unclear Role of Information Systems and Information Technology", that information technology content in the curriculum of management accounting courses tended to be less important, and there was no clarity about learning information technology such as what should be taught to students related to accounting in general. The use of this method, namely by collecting data on management accounting curricula for several years in America and several countries in Europe, also illustrates the contributive results and needs to be considered. One of them is the difficulties faced by universities in designing curriculum programs in following changes on existing accounting practices, so this should be taken into consideration in managing and designing the management accounting curriculum going forward.

By using the literature study method, the research above is also able to present the fact that for the period of 35 years before the research took place, there were only a few management accounting literature that advocated and raised the importance of information technology adoption. In fact, this is considered by the researcher to be a very important matter. Future research about this topic is expected to be carried out, so that mastery of information technology aspect can be prioritized.

Maharsi (2000) used the literature study method to collect data that is able to explain the development of information technology, the influence of the development of information technology on the field of management accounting, and explain various problems arising from the development of information technology and how to overcome them. All of these explanations are used to convey the idea of research in order to maintain the survival of an organization, and it must be realized that the business environment will always change (including information technology—that is also experiencing some growth).

Development of information technology are equals with the changes in the field of management accounting. Maharsi (2000) were also explained some of the benefits and negative impacts of the development of information technology for companies. By knowing it all, it is hoped that companies can be survived in this era, and be able to face the global market competition.

From the four studies described earlier, it can be concluded that the use of literature study methods is indeed very useful for expressing some ideas accompanied by collecting the related data and literature to be used as a basis for subsequent research. The use of this method can also reveal phenomena that exist in the field without going through an empirical testing process, but only depends on literature data or the results of empirical tests conducted by other researchers.

This method can be used by further researcher that wants to reveal existing phenomena without conducting field testing (of course, sometimes it can resolve their time constraints too), but still must be accompanied by in-depth discussions from the results of the literature collected. This method is also very useful for further research that wants to explore further the topic of information technology in management accounting, if it turns out that in the region or country, the discussion of this topic is still very rare or very urgent, while the literature and replication research are available in the limited area.

## **2. Use of Quantitative, Qualitative and Mixed Methods**

Besides using the literature study method, previous researchers also used quantitative, qualitative and a mixture of the two. Most of data collection in this case is done by distributing questionnaires, conducting interviews both informally and formally and deeply. Obviously, the combination of the two methods (called mixed method) is generally carried out by some previous researchers by

combining data collection through questionnaires and interviews. Some of the studies discussed in this paper also tend to choose combining these methods, because the depth of results is more adequate and in accordance with the main objectives of their research.

One study that used mixed method methods is a study entitled "The Effects of Cloud Technology on Management Accounting and Decision Making", initiated by Strauss, Kristandl & Quinn, in 2015. Cloud computing as a form of information technology advancement in terms of its usefulness was tested to several respondents who acted as Controller Panels at WHU Otto Beisheim School of Management in Germany. Furthermore, Strauss, Kristandl & Quinn used data collection methods with questionnaires to identify reasons for adopting (or not adopting) cloud technology, the advantages of using cloud technology and business areas that have used cloud technology, and identifying the extent to which cloud technology can affect completeness of information as a basis for decision making. Whereas, the interview technique for respondents was used by researchers to specify several things such as adoption benefits and reasons for adopting (or not adopting) the technology. From the results of his research, they succeeded in proving that broadly speaking, the adoption of information technology in the form of cloud computing brings advantages in the field of corporate management accounting.

The next study that combines data collection techniques such as Strauss, Kristandl & Quinn (2015) is a study conducted by Spraakman & Sanchez-Rodriguez (2010). This research aims to test the impact of the Enterprise Resource Planning (ERP) System on large companies in Canada. In his research entitled "The Impact of Information Technology on Management Accounting Practices", Spraakman & Sanchez-Rodriguez (2010) distributed questionnaires to companies included in his research sample after conducting interviews about mapping research results with several consultants who were experts in the Enterprise Resource Planning (ERP) System. From the results of his analysis, it was found evidence that the techniques in management accounting have changed, with reduced data entry activities and more development in the design of business processes, along with the increasing progress in information technology.

Burns, Scapens & Turley in 1996 discussed the role of current and future management accountants (as in the aspect of commercial orientation) and the impact of information technology on management accounting. Related to information technology, using a mixed method, they distributed questionnaires to 300 members of the Chartered Institute of Management Accountant (CIMA-funded), did some longitudinal case studies at three companies in the UK for 18 months, and conducted interviews with 15 companies in England. They succeeded to find the importance of information technology in educating management accountants. Education about information technology is not only important to train the ability of current management accountants, but also in the future.

Besides the use of mixed methods, qualitative interview methods are also tempted some researchers in the topic of information technology in management accounting. Research by Akroyd & Spraakman (2013) which carried the educational context is an empirical test of the lack of comprehensive management accounting course curriculum related to information technology. In their research entitled "Requirements for Information Technology with Newly Hired Management Accounting Graduates", Akroyd & Spraakman (2013) conducted interviews with Chief Financial Officers (CFO) and management accountants at 20 companies in New Zealand, in order to realize their research objectives to know what are the aspects and skills of information technology that are actually needed by labor recruiters in the field of management accounting. From the interview process, conclusions were obtained regarding the urgency of the need for information technology capabilities by the management accountant, including the detailed explanation about what skills they should master.

The above research also criticizes several regions of the world, especially in the United Kingdom (UK) and America, that there are still management accounting curriculum designs that are less collaborative with the teaching of information technology in them, while the existing work world requires accounting students to master technology competently. Researchers collected teaching curriculum data for universities, especially those in the UK and America, and then criticized it, and also collected some related literature that opened the eyes of users of research on the need for mastery of information technology, as well as the competition of individuals (especially accounting students) at that time.

Taipaleenmäki & Ikäheimo in 2013 conducted a study that used the advancement of information technology as a context to show how management accounting and financial accounting converge in the domain of engineering and technology. For examples of illustrative convergence, researchers used previous studies as examples of indirect empirical evidence and the researchers' own experience in the field. The researcher also held informal discussions about the convergence between the management accounting and financial accounting with several Chief Financial Officers (CFOs), those holding control of other companies, and auditors. One conclusion that can be obtained from this research is that information technology has an important and even crucial role in the process of convergence between the management accounting and financial accounting.

The next study was exploratory research conducted by Xiao, Duh & Chow in 2011. The study entitled "Exploring the direct and indirect performance of information technology/management accounting and controls" used questionnaire and SEM data to analyze whether and how information technology can influence management accounting and controls (MAC). In addition, they also have the desire to know how companies with Chinese culture apply the practice of management accounting performance. The questionnaire survey was distributed to 219 Chinese companies, gave the results that information technology and MAC had been implemented by companies in China, and indeed had a relationship between the two. The companies in China were known to implement the use of information technology and MAC, and also acknowledge the benefits gained compared to before the implementation of the system.

The use of empirical testing in the above studies presents some understandings because it is accompanied by a reflection of the facts that occur in the topic of information technology in management accounting. In terms of contribution, the results of research using empirical tests will further strengthen (or weaken) existing literature views, so most empirical research can be more appropriate to be used as a reference, especially in considerations related to the adaptation of new technologies and education or training the technology in management accounting and professions around them.

## **OUR OPINION**

Through a review of various studies discussed earlier, it is known that the role and urgency or need for information technology in management accounting can be reviewed in various contexts, such as in the context of business and education. Of course, all researchers presented in this paper made the exact parties involved in technology and management accounting field (both company leaders / managers and employees in the management accounting division and management accounting academics and students) as respondents related to research in this topic. Thus, the scope of the sample that is defined and selected is very clear and is considered capable of representing the data and the results of the analysis presented.

Although it does have different objectives, researchers tend to recommend further research to use empirical testing, either through the help of interviews or the distribution of questionnaires. Literature studies will be sufficient if it is used to

support or refute the results of existing empirical tests, so that research users will feel the benefits of existing research findings, because existing and real reflections in the field are now more revealed.

## **CONCLUSION**

Information technology and management accounting are two things that turns out to be related to each other. In its development, the efficacy of information technology has given some rise to the need for competitive advantage both for companies and individuals. The use of computerized systems is increasingly being adopted in both financial accounting and management.

In topics related to information technology and management accounting, there are various interesting contexts and methods that can be taken or developed more. Through this paper, we are supplying an interesting read-list consist of some popular studies that may inspire subsequent researchers. More studies are hopefully not only included the urgency/needs and the impact of the application of technology on management accounting in the business context, but also develop the research context in this topic by relating it to the other context, such as in world of education, for example. Analyzing the role and urgency of information technology are also can be done through various methods, ranging from literature studies, quantitative methods (by collecting data using questionnaires), qualitative methods (by conducting interviews), and combining between existing methods (mixed method), such as merging collecting data by distributing questionnaires accompanied by interviews with certain informants.

Related to the discussion in this paper, the next researcher needs to design and defines the objectives of the study that will be taken clearly, then choose the appropriate method in realizing that goal. If later the researcher wants his research contribution to be an opening for assumptions and theories for further research, the researcher simply uses the literature study method by collecting similar data and literature related to the context of research in the topic of information technology in management accounting. However, if the researcher wants results that are more profound and able to reflect the reflection of the current situation in the field, researchers can add or use methods accompanied by empirical tests, such as testing data that has been collected directly through questionnaires, interviews, or a combination of both.

## **SUGGESTIONS**

The research cited and discussed in this paper covers various regions of the world with various cultural cultures and different behaviors of the people. Besides, the time and period of the research carried out from several studies also varied. These things are included in the limitations of this paper, given the inability to find uniformity between the two, although it is also recognized that the topic of technology research and management accounting is indeed still limited and classified in exploratory research.

Future studies are expected to follow the suggestions contained in the 'Our Opinion' section, namely to use empirical test methods (either using the help of quantitative, qualitative or mixed methods), and not just using literature studies. This is because the findings in empirical tests (especially with the help of secondary data) will be able to describe and reflect the real fact/situation more, so that users of the research will feel the benefits of existing research findings.

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