Quality of Accounting Information Systems for Facing Industrial Revolution Is Influenced by Business Process and Organizational Commitment

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Abstract
The purpose of the study was to determine the effect of Business Process (X1) on the Quality of Accounting Information Systems (Y) at the Bureau of Environment at Muhammadiyah University in Tangerang and find out the effect of Organizational Commitment (X2) on the Quality of Accounting Information Systems (Y) in Environment of Muhammadiyah University of Tangerang by carrying out questionnaires given to 64 respondents from all populations totaling 74 respondents and processing the results of the study using Smartpls software Version 2.0, M3 where it was found that Business Process (X1) affected the Quality of Accounting Information Systems (Y) in The Environmental Bureau of the University of Muhammadiyah Tangerang and Organizational Commitment (X2) influenced the Quality Accounting Information System (Y) at the Bureau at Muhammadiyah University, Tangerang, Banten Province.

Key words: Business process; Organizational commitment and quality; Accounting information system

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INTRODUCTION
In a business world increasingly dominated by and indeed reliant upon information, corporate accounting information systems have become central to enabling social, political and economic activities to be rendered knowable, measurable, accountable and manageable. More importantly, such systems have become pivotal in the adjudication of rival business claims between competing social constituencies both inside and outside the company. Corporate accounting information systems are implicated not only in conditioning the global flows of capital investment and business resources, but also in assisting in determining/measuring the effectiveness of business institutions and organisations, institutions and organisations through which differing levels of social, political and economic power are expressed. Clearly, the pervasive influence of corporate accounting information systems provokes many questions. Questions about how such accounting information systems develop; why particular accounting information systems and practices are adopted; and how such accounting information systems are regulated within business organisations. More importantly perhaps such influence provokes questions about how such corporate accounting information systems are utilised, and about the adequacy of the understandings distilled from the information such accounting information systems generate (Boczko, 2007, p.1).

Accounting information systems are by now mature tools, they are not only essential instruments for managing the company, but also important enablers of business innovation. Indeed, they have always been evolving during time and there is still a long way to go, for the best alignment between accounting information systems and the business. The evolution of accounting information systems is like a broken line, showing various trend breaches resulting from disruptive changes in a wide variety of societal and environmental factors. However, there are three factors that may be considered the main antecedents of accounting information system changes, i.e.: a). Technology; b). Management practices and models; c). Accounting rules. The relation between
accounting information systems and these factors has been the object of many studies in recent years. It is considered a complex relationship where accounting information systems sometimes are the dependent variable and sometimes the independent variable. A large part of the studies consider technology as the main variable that has an impact on management practices and models, accounting rules and on the other components of the accounting information system. For example, the Internet deeply influenced accounting information systems, and indeed web technology has had an impact both on how an accounting information system is built, and on how it is used. Nowadays it is difficult to imagine how databases and the access to them are organised without having access to the Internet. And this is not just because of standardized business reporting as enabled by XBRL but also because of the emergence of cloud computing. Also the migration from a hierarchical organisational model towards a process oriented model has been driven by ERP systems, because of the new technology and the new way of designing accounting software (Mancini, Vaassen & Dameri, 2013, p.2).

The fourth industrial revolution will generate great benefits and big challenges in equal measure. A particular concern is exacerbated inequality. The challenges posed by rising inequality are hard to quantify as a great majority of us are consumers and producers, so innovation and disruption will both positively and negatively affect our living standards and welfare. The consumer seems to be gaining the most. The fourth industrial revolution has made possible new products and services that increase at virtually no cost the efficiency of our personal lives as consumers. Ordering a cab, finding a flight, buying a product, making a payment, listening to music or watching a film any of these tasks can now be done remotely. The benefits of technology for all of us who consume are incontrovertible. The internet, the smart phone and the thousands of apps are making our lives easier, and on the whole more productive (Schwab, 2016, p.16).

What is the phenomenon we are now experiencing? The first industrial revolution emerged in the 1780s with steam power, making humans more productive. Then in the 1870s the second industrial revolution emerged with the development of mass production and electrical energy. The third industrial revolution emerged with the development of IT and electronics, which enabled more efficient production. We are now in a new phase where the fusion of several technologies is not only automating production, but also knowledge. There are many working to classify and name the phenomenon we are all experiencing. Talk of “Industry 4.0” emerged from Germany’s manufacturing industry in the early 2000s. The changes that are occurring are happening now because humans have finally developed the computing capacity to store massive amounts of data, which in turn can enable machine learning. The outcome of this is the development of what are called cyber-physical systems (CPSs). The term cyber-physical systems was coined by the US National Science Foundation in 2006 with the hosting of several workshops on artificial intelligence and robotics and the declaration that CPS would henceforth be a major area of research (Gleason, 2018, p.2).

Since its inception, the industrial revolution has raised vital issues of analysis and many intense debates. Although these issues have changed as the technology and organization associated with the revolution have advanced and as additional societies have been drawn into the process, historical assessment remains essential not simply for understanding the past but for grasping what the industrial economy is now and what its implications are. Causation remains a fundamental concern. Explaining why Britain or Japan or, more recently, China generated an industrial revolution remains a challenging historical exercise. Interpreting what basic factors were involved and how they might be replicated even today merges history with contemporary concerns. Asking why some societies continue to face difficulties in making a turn to industrialization (or why some societies may not wholeheartedly desire an industrial revolution because of its threat to their more important values) requires a serious understanding of what causation has entailed for the past two hundred years (Stearns, 2013, p.281).

1. LITERATURE REVIEW

1.1 Accounting Information System

An accounting information system is a collection of data and processing procedures that creates needed information for its users. Although the terms data and information are often used interchangeably, it is useful to distinguish between them. Data (the plural of datum) are raw facts about events that have little organization or meaning for example, a set of raw scores on a class examination. To be useful or meaningful, most data must be processed into useful information for example, by sorting, manipulating, aggregating, or classifying them. An example might be by taking the raw scores of a class examination and computing the class average (Bagranoff, 2010, p.5).

Accounting Information System is a system that collects, records, stores, and processes data to produce information for decision makers. It includes people, procedures and instructions, data, software, information technology infrastructure, and internal controls and security measures. Accounting is a data identification, collection, and storage process as well as an information development, measurement, and communication process. By definition, accounting is an information system, since an Accounting Information System collects, records, stores, and processes accounting and other data to produce information for decision makers. An Accounting Information System can be a paper and pencil manual
system, a complex system using the latest in IT, or something in between. Regardless of the approach taken, the process is the same. The Accounting Information System must collect, enter, process, store, and report data and information. The paper and pencil or the computer hardware and software are merely the tools used to produce the information. This text does not distinguish an Accounting Information System from other information systems. Instead, our viewpoint is that the Accounting Information System can and should be the organization’s primary information system and that it provides users with the information they need to perform their jobs. There are six components of an Accounting Information System: 1. The people who use the system, 2. The procedures and instructions used to collect, process, and store data, 3. The data about the organization and its business activities, 4. The software used to process the data, 5. The information technology infrastructure, including the computers, peripheral devices, and network communications devices used in the AIS, 6. The internal controls and security measures that safeguard Accounting Information System data. These six components enable an AIS to fulfill three important business functions: 1. Collect and store data about organizational activities, resources, and personnel. Organizations have a number of business processes, such as making a sale or purchasing raw materials, which are repeated frequently. 2. Transform data into information so management can plan, execute, control, and evaluate activities, resources, and personnel. 3. Provide adequate controls to safeguard the organization’s assets and data. Since accounting data comes from an AIS, AIS knowledge and skills are critical to an accountant’s career success. Interacting with an AIS is one of the most important activities that accountants perform. Other important Accounting Information System related activities include designing information systems and business process improvements (Romney & Steinbart, 2018, p.10).

Accounting information systems is collect, record, store, and manipulate financial and nonfinancial data and convert these data into meaningful information for management decision making (Simkin, Rose & Norman, 2012, p.73). The Accounting Information System subsystems process financial transactions and nonfinancial transactions that directly affect the processing of financial transactions. For example, changes to customers’ names and addresses are processed by the AIS to keep the customer file current. Although not technically financial transactions, these changes provide vital information for processing future sales to the customer. The AIS is composed of three major subsystems: (1) the transaction processing system (TPS), which supports daily business operations with numerous reports, documents, and messages for users throughout the organization; (2) the general ledger/financial reporting system (GL/FRS), which produces the traditional financial statements, such as the income statement, balance sheet, statement of cash flows, tax returns, and other reports required by law; and (3) the management reporting system (MRS), which provides internal management with special-purpose financial reports and information needed for decision making such as budgets, variance reports, and responsibility reports (Hall, 2011, p.7).

Figure 1
Overview of an accounting information system

The accounting information system comprises the processes, procedures, and systems that capture accounting data from business processes; record the accounting data in the appropriate records; process the detailed accounting data by classifying, summarizing, and consolidating; and report the summarized accounting data to internal and external users. Many years ago, accounting information systems were paper based journals and ledgers that were recorded manually by employees. Today, nearly every organization uses computer systems.
for maintaining records in its accounting information system. The accounting information system is classifies, summarizes, and consolidates the data. As input and processing occur, data must be added to or retrieved from data storage. From this stored data and processing, several types of output are prepared. Some of the outputs would be documents such as purchase orders, invoices, and customer statements; other output would be checks to vendors and employees. The output reports are feedback that managers within the organization use to monitor and control the business processes. The number of computerized versus manual work steps may vary across organizations, but every organization should have each of these component pieces. In some organizations, the processes may be manual steps performed by employees, and the accounting records may be paper journals and ledgers. At the other extreme are companies where many or all of these work steps are performed by computers, and the accounting records are in computer files. In most cases, there is a combination of manual and computerized work steps (Turner, Weickgenannt & Copeland, 2017, p.5).

Based on the understanding of business processes that have been submitted above it can be concluded that accounting information system is a system that aims to collect, record, store, and process data to produce information for decision makers. thus it can be said that the accounting information system (AIS) is the intelligence of information sourced from the process of identifying, collecting, and storing data and developing information, measurement, and communication processes. Therefore accounting is an information system, this is because Accounting Information Systems are also activities or processes to collect, record, store, and process accounting and other data to produce information for decision makers.

1.2 Business Process

According Bodnar & Hopwood (2013, p.8) states that a business process is an interrelated set of tasks that involve data, organizational units, and a logical time sequence. Business processes are always triggered by some economic event, and all have clearly defined starting and ending points. For example, the customer order management process might be triggered by the receipt of a customer purchase order; the process might begin with the creation of a sales order, and it might end with the collection of the customer’s payment on accounts receivable. A key characteristic of business processes is that they are not necessarily limited to a single functional area of the information system or the organization chart. For example, a sales process can span various departments in the organization chart, such as sales, inventory, shipping, and credit checking. Of course, how any given process is defined is simply a matter of convenience. One could just as easily define a sales process as only the act of entering the customer’s order. A business process is a collection of coordinated service invocations and related activities that produce a business result, either within a single organization or across several (Juric, Mathew & Sarang, 2006, p.16).

A business process is a set of related, coordinated, and structured activities and tasks that are performed by a person, a computer, or a machine, and that help accomplish a specific organizational goal. To make effective decisions, organizations must decide what decisions they need to make, what information they need to make the decisions, and how to gather and process the data needed to produce the information. This data gathering and processing is often tied to the basic business processes in an organization (Romney & Steinbart, 2018, p.4).

Business process consists of a set of activities that are performed in coordination in an organizational and technical environment. These activities jointly realize a business goal. Each business process is enacted by a single organization, but it may interact with business processes performed by other organizations. After a first consideration of business processes, their constituents, and their interactions, the view is broadened. Business process management not only covers the representation of business processes, but also additional activities (Weske, 2007, p.5).

Business process is a set of coordinated and related activities that takes one or more types of input and creates an output of value to the customer of that process. The customer might be a traditional external business customer who buys goods or services from the firm. An example of such a process is capturing a sales order, which takes customer input and generates an order. The customer of a business process might also be an internal customer such as a worker in another department of the firm. For example, the shipment process generates the internal documents workers need in the warehouse and shipping departments to pick, pack, and ship orders (Stair & Reynolds, 2010, p.370).

Business process is more easily understood when it is not shrouded by technology. The information needed to trigger and support events such as selling, warehousing, and shipping is fundamental and independent of the technology that underlies the information system. For example, a shipping notice informing the billing process that a product has been shipped serves this purpose whether it is produced and processed manually or digitally. Once students understand what tasks need to be performed, they are better equipped to explore different and better ways of performing these tasks through technology. Finally, manual procedures facilitate understanding internal control activities, including segregation of functions, supervision, independent verification, audit trails, and access controls. Because human nature lies at the heart of many internal control issues, we should not overlook the importance of this
aspect of the information system (Hall, 2011, p.25).

A business process is a logically related set of activities that defines how specific business tasks are performed, and it represents a unique way in which an organization coordinates work, information, and knowledge. Managers need to pay attention to business processes because they determine how well the organization can execute its business, and they may be a source of strategic advantage. There are business processes specific to each of the major business functions, but many business processes are cross-functional. Information systems automate parts of business processes, and they can help organizations redesign and streamline these processes (Laudon & Laudon, 2012, p.72). A business process is a prescribed sequence of work steps completed in order to produce a desired result for the organization. A business process is initiated by a particular kind of event, has a well-defined beginning and end, and is usually completed in a relatively short period. Business processes may have direct or indirect effects on accounting records, and these can be categorized into revenue processes, expenditure processes, conversion processes, and administrative processes (Turner, Weickgenannt & Copeland, 2017, p.24).

Based on the understanding of business processes that have been submitted above it can be concluded that business processes are a series of activities that are interrelated, coordinated, and structured carried out both by someone, a computer, and a machine that can aim to achieve organizational goals.

1.3 Organizational Commitment
Organizational commitment is the relative strength of the individual’s identification with, and involvement in, a particular organization. It consists of three factors: a) a strong desire to remain a member of the organization; b). a strong belief in, and acceptance of, the values and goals of the organization; c). a readiness to exert considerable effort on behalf of the organization. An alternative, although closely related, definition of commitment emphasizes the importance of behaviour in creating commitment (Armstrong, 2006, p.273).

Commitment is characterized by acceptance of the change as positive and incorporation of changed behaviors into daily organizational life. Symptoms of the fourth phase include employee support of the change and involvement in managing its implementation (Gilley, et.al., 2009, p.365). High commitment is defined as being ‘concerned with both behavioural commitment to pursue agreed goals and attitudinal commitment reflected in a strong identification with the enterprise (Beardwell, Holden & Claydon, 2004, p.21).

Organizational commitment is defined as the desire on the part of an employee to remain a member of the organization. Organizational commitment influences whether an employee stays a member of the organization (is retained) or leaves to pursue another job (turns over).

Our attention in this chapter is focused primarily on reducing voluntary turnover by keeping the employees whom the organization wants to keep, though we will touch on involuntary turnover in a discussion of layoffs and downsizing. Employees who are not committed to their organizations engage in withdrawal behavior, defined as a set of actions that employees perform to avoid the work situation behaviors that may eventually culminate in quitting the organization (Qolquitt, Lepine & Wesson, 2013, p.64).

Organizational commitment is the degree to which employees believe in and accept organizational goals and desire to remain with the organization. Research has revealed that job satisfaction and organizational commitment tend to influence each other. What this finding suggests is that people who are relatively satisfied with their jobs will be somewhat more committed to the organization and also that people who are relatively committed to the organization are more likely to have greater job satisfaction. A logical extension of organizational commitment focuses specifically on continuance commitment factors, which suggests that decisions to remain with or leave an organization ultimately are reflected in employee absenteeism and turnover statistics. Individuals who are not as satisfied with their jobs or who are not as committed to the organization are more likely to withdraw from the organization, either occasionally through absenteeism or permanently through turnover (Mathis & Jackson, 1999, p.92).

From the opinions of experts above it can be said that organizational commitment is defined as the desire of employees to remain a member of the organization or company. Organizational commitment influences and proves its loyalty whether an employee remains a member of the organization or is retained or dismissed by the company and given the opportunity to the employee to look for another job that is better.

1.4 Review of Previous Research and Hypotheses
Based on research conducted by Meiryani & Syaifullah (2015) examining the effect of business processes on the Quality of Accounting Information Systems, it shows that business processes affect the quality of accounting information systems. Furthermore, the research conducted by Meiryani & Lusianah (2018) which examines the influence of business processes on the Quality of Accounting Information Systems, shows that business processes affect the quality of accounting information systems. A similar study was also conducted by Sari (2018) which examined the Effect of Business Processes on the Accounting Quality of Information Systems with Surveys in Strategic BUMN Industry in Bandung Indonesia showing that business processes affect the quality of accounting information systems. The same research
conducted by Nusa (2016) tested The Effect of Business Process Effectiveness on System Quality Accounting Information Survey at Universities in the City of Bandung shows that business processes affect the quality of accounting information systems, then the same research is also conducted by Trigoa, Belfo & Estebanezc (2016) who examine Accounting Information Systems: evolving towards a business process oriented accounting, indicating that business processes affect the quality of accounting information systems. Based on the above research, the hypothesis obtained is stated, namely:

**H1: Business Process Affects the Quality of Accounting Information Systems**

Based on research by Firdaus (2016) examining the Effect of Employee Organizational Commitment and Manager Knowledge on the Successful Application of Accounting Information Systems in Banking Companies in Makassar City, shows that Organizational Commitment affects the quality of accounting information systems. Another study conducted by Nuriyyah (2018) who examines the Effect of Organizational Commitment and Accounting Manager Knowledge on the Success of Accounting Information System Implementation and Its Impact on Corporate Performance (Survey on Transportation and Warehousing Sector BUMN in Bandung), shows that Organizational Commitment affects system quality accounting information. Similar research was also conducted by Ilham and Hayon (2018) which examined the Effect of Organizational Commitment and Manager Knowledge on the Success of Accounting Information System Implementation (Case Study at District and Village Offices in Semangga District of Merauke Regency) indicating that Organizational Commitment influences the quality of information systems accounting. The same study was conducted by Rapuna (2015) who examined the Effect of Organizational and Organizational Organizational Commitment to Information Quality Mediated By Quality of Accounting Information Systems showing that Organizational Commitment affects the quality of accounting information systems. Furthermore, the same research was also carried out by Ladewi, et. al., (2017) who examined the Effect of Organizational Commitment on the Quality of Accounting Information Systems and their Impact on the Quality of Accounting Information shows that Organizational Commitment affects the quality of accounting information systems. Strengthening previous research wherein further, research conducted by Mulyani & Endraria (2017) who tested the The Empirical Testing for the Effect of Organizational Commitment and Leadership Style on the Implementation of Success in Enterprise Resource Planning (ERP) Systems and its Implications on Quality of Accounting Information show that Organizational Commitment affects the quality of accounting information systems, from the results of the above research it can be stated that the hypothesis in this study are:

**H2: Organizational Commitment Affects the Application of Accounting Information Systems**

### 2. Research Method

The research methodology can be interpreted as a study of research methods that can be used to generate (new) knowledge. The methodology of this study aims to make various stages of research, ranging from work plans (proposals) to research to publications. The definition of research methodology is broader than the research method. Research methods are part of the research methodology. The research methodology includes not only research methods but also research questions, research background, hypotheses, data collection, data analysis, interpretation of data / information and conclusions and suggestions / recommendations. The research method is a collection of procedures, schemes and algorithms that are used as measuring instruments or instruments in conducting research. All methods used by researchers during research are called research methods. These methods are planned, can be scientifically accountable, and as far as possible the value is neutral (neutral value). These methods include theoretical procedures, experimental studies, numerical schemes, statistical approaches, and so on. The research method helps researchers to collect data from samples and find solutions to certain problems (Timothy, 2017, p. 4).

According to Ghozali (2014) Structural Equation Modeling (SEM) is a combination of two separate statistical methods, namely factor analysis developed in psychology and psychometrics with simultaneous equation models developed in econometrics. This research is quantitative research in explanatory form, where the problem solving model and analysis is carried out using statistical analysis which empirically tests the relationship between research variables the influence of leadership and discipline on the application of accounting information systems with the population in this study are employees or staff at the University Bureau Muhammadiyah Tangerang as many as 76 people. by using the Slovin formula with an error margin of 5%, the sample obtained from the results of the calculation is 64 respondents. In analyzing data, researchers used the SEM PLS 2.0 M3 application to test the hypothesis of this study.

### 3. Analysis and Discussion

Before presenting the results of the following research the researchers took samples to all employees, especially the Bureau in the Muhammadiyah University of Tangerang where samples were taken as many as 64 respondents from all populations totaling 74 respondents, based on the results of calculations using the Smart PLS 2.0 M3 application application. the results of a hypothetical full model path diagram that can be obtained with the help of Smart PLS 2.0 M3, which are presented as follows:
Table 1
Significance Test on the Business Process Influences Quality of Accounting Information Systems for Facing Industrial Revolution

<table>
<thead>
<tr>
<th>Path Coefficient</th>
<th>( t_{count} )</th>
<th>( t_{critical} )</th>
<th>Assumption</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.297</td>
<td>2.950</td>
<td>1.96</td>
<td>( t_{count} &gt; t_{critical} )</td>
<td>Hypothesis accepted</td>
</tr>
</tbody>
</table>

Source: PLS calculation results.

According to the table above processed using Smartpls software Version 2.0, M3 the \( t_{count} \) value is 2,950, which is greater than \( t_{critical} \), 1.96. It can be concluded that \( t_{count} > t_{critical} \) There is an Business Process Influences Quality of Accounting Information Systems for Facing Industrial Revolution.

Table 2
Significance Test on the Organizational Commitment Influences Quality of Accounting Information Systems for Facing Industrial Revolution

<table>
<thead>
<tr>
<th>Path Coefficient</th>
<th>( t_{count} )</th>
<th>( t_{critical} )</th>
<th>Assumption</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.699</td>
<td>6.992</td>
<td>1.96</td>
<td>( t_{count} &gt; t_{critical} )</td>
<td>Hypothesis accepted</td>
</tr>
</tbody>
</table>

Source: PLS calculation results.

According to the table above processed using Smartpls software Version 2.0, M3 the \( t_{count} \) value is 2,832, which is greater than \( t_{critical} \), 1.96. It can be concluded that \( t_{count} > t_{critical} \) There is an Organizational Commitment Influences Quality Of Accounting Information Systems For Facing Industrial Revolution.

CONCLUSION

Based on the results of the above calculations using Smartpls software Version 2.0, M3 and based on previous research and discussion described in the previous chapter, it can be concluded that this study provides empirical evidence regarding the Effect of Business Processes (X1) and Organizational Commitment (X2) on System Quality Accounting Information (Y) in the Bureaus at the Muhammadiyah University of Tangerang where this study proves that Business Process (X1) influences the Quality of Accounting Information Systems (Y) at the Bureau of Environment in Muhammadiyah University Tangerang and Organizational Commitment (X2) affects System Quality Accounting Information (Y) at Bureaus in the Muhammadiyah University of Tangerang Banten Province.

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