

The Effect of Business Process on Accounting Information Quality through Accounting Information System Quality

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THE EFFECT OF BUSINESS PROCESS ON ACCOUNTING INFORMATION QUALITY THROUGH ACCOUNTING INFORMATION SYSTEM QUALITY

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Abstract— Business process quality is one of famous and complex concepts. Bad quality of this process will make the application of accounting information system failed and quality of accounting information go down. Hence, the purpose of this research is to test and analyze the impact of business process quality on accounting information system quality and the impact of accounting information system quality on accounting information quality. The population used is from 114 commercial banks listed on website of Financial Services Authority of Indonesia. By using simple random sampling, banks as samples are taken from population. According to calculation of Slovin formula, there are 53 banks as the number of samples. Unfortunately, only 14 bank that can be sample because 61 respondents related to these banks participate to fulfill questionnaire in this survey. Moreover, collected data are analyzed by utilizing variance-based structural equation model. The result of this research shows two things. Firstly, business process has a significant positive effect on accounting information system quality. Secondly, accounting information system quality has a significant positive effect on quality of accounting information.

Index Terms— business process quality, quality of accounting information system, quality of accounting information

1. INTRODUCTION

The successfulness of information system and its influencing factors are assumed as an essential thing for information system topic [1]. For that reason, the determining factor that must receive attention is business process besides organizational culture, politic, atmosphere, structure, purpose, constituent and leadership style [2].

One of main activities needed to implement new system by reviewing and evaluating its available work flows or business process [3]. These flows can be used to understand how organization operates, designs, and applies flexible information system [4].

Essentially, business process consists of not only a set of logical activities defining details of way to complete business tasks but also unique way where organization can coordinate the tasks, information, and knowledge [2]. Comprehension of good business process will result development of good frame off accounting information system [5].

One of cases of business process in banking industry is found in Citibank. Citibank is suspected doing some law-related violations such as murder conducted by debt collectors on its credit card holder and fund fraud on this bank [6].

Another case related to business process can be found at withdrawing money through automatic teller machine (ATM) through skimming process that can copy personal identification number of card owned by depositors [7]. This case happens in ATM of Bank Central Asia in Bali. As the consequence, Bank Central Asia covers missing fund of depositors as high as 5 billion rupiahs. The similar case happens in Permata Bank. Depositor named Tjoh Winarto, 40, sues Bank Permata because his money is accidentally missing. Unfortunately, his effort is failed because court does not accept his claim [8]. Study associated with business process is conducted by Al-Mudimigh

[9] by taking Radwa Food Production as the research object. Mudimigh [9] discusses roles of management of business process to make the application of enterprise and software system to increase organizational performance, take better decisions, and achieve competitive advantage.

To make an effective decision, according to Romney & Steinbart [10], organizations have to determine the kind of decision they need. After that, they have to specify information they need. Then, they have to know how to collect and process data to gain information. Collecting and processing data is often associated with business process of organization.

The purpose of this research is to test and analyze two things: the effect of business process quality on accounting information system quality, and the effect of accounting information system quality on accounting information quality.

The next sections in this paper describe several things: literature review related to concepts that are used (see section two), theoretical framework (see section three), research method (see section four), results and discussion (see section five) as well as conclusion and recommendation (see section six).

2. LITERATURE REVIEW

A. Business Process Quality

Business process is a set of natural effort of activities to create value of organization [11] or a collection of tasks and activities that structurally and regularly exist to result goods and services for internal and external users of firms [12]. This process refers to how the works are regulated, coordinated, and focused on resulting valuable goods or services [2] or refers to standard operating procedures needed to execute the work efficiently [13].

Business process quality (BPQ) can be measured by 6 items

by referring to Shtub & Karni [14], Dumas *et al.*, [15]. Six items intended are as follows.

1. Computer-based information system used has time criterion to result report (BPQ1).
2. Computer-based information system used is able to make delay time short to work (BPQ2).
3. Computer-based information system used has work control to ensure acceptance and distribution of information conducted according to established rules (BPQ3)
4. Computer-based information system used to result information is always assessed by top senior and co-workers without complains and problems (BPQ4)
5. Computer-based information system used always helps to get all information demanded by users (BPQ5).
6. Computer-based information system used to result information is able to handle other routine works where the number of activities is higher than that of usual activities (BPQ6).

B. Accounting Information System Quality ²¹

Accounting information system is defined by Weygandt *et al* [16] as the system collecting, processing transaction data, and distributing financial information to its stakeholders. This explanation is similar to what Bagranoff *et al* [11] state. They state accounting information system is the data collection and process procedures creating information needed by its users. The same explanation also comes from Bodnar & Hopwood [17]. They define accounting information system as resource collection, such as people and equipment, designed to change financial and other data to be information. Moreover, this information is communicated with related parties so that they are able to take a decision. The change of this accounting information system can be manually done or by using computerized system.

Accounting information system quality (AISQ) can be measured by 6 items referring to Heidman [18], Barrier [19], and Stair & Reynolds [20]. Six items intended are as follows.

1. Until now, information system used facilitates user to get information from other parts (AISQ1).
2. Until now, information resulted from its systems on every part of organization always has the same benefits for organization (AISQ2).
3. Until now, information system used is already developed to fulfill user needs so that user can easily use it (AISQ3).
4. Until now, information system used is able to adapt to changes of internal and external environment (AISQ4).
5. Until now, bank information system can be easily accessed by users by using computer device (AISQ5).
6. Until now, information needed can be easily obtained by using existing information system (AISQ6).

C. Accounting Information Quality ²⁶

According to Wei [21], accounting information quality refers to output quality resulted by information system. Output can be reports or online screen. Definition of this quality is associated with four dimensions of information quality: accuracy, completion, consistency, and punctuality.

Accounting information quality (AIQ) can be measured by 8 items referring to Wei [21] and Schermerhorn [22]. Eight items intended are as follows.

1. Until now, information resulted from its system reflects real condition (AIQ1).
2. Until now, information resulted from its system on every

function of organization give the same benefits for organization (AIQ2).

3. Until now, information resulted from its system matches with needs of organization (AIQ3).
4. Until now, information resulted from its system matches with user position related to authority and job descriptions in organization (AIQ4).
5. Until now, every function of organization always obtains information needed on time (AIQ5).
6. Until now, advance technology exists to get, process, and send information in organization to take correct decision on time (AIQ6).
7. Until now, all information needed is completely displayed according to existing rules.
8. Until now, change in information system caused by appearance of new information needed always frequently happens in organization (KIA8).

3. THEORETICAL FRAMEWORK

A. The Effect of Business Process Quality on Accounting Information System Quality ¹³

To apply new system, review and evaluation on business process are essential to exist [3]. Knowledge and expertise related to business process are needed to manage and measure firm performance. Design of business process is the determinant of information system having quality [23]. Based on this information, the first hypothesis can be stated as follows.

H₁: Business process quality will have a positive effect on accounting information system quality.

B. The Effect of Accounting Information System on Accounting Information System Quality

Accounting information consist of three main parts. The first part is the same structure consisting of human resource and computer. The second one is the same process referring to the use of accounting method. The third one is the same purpose, i.e. to give information. Accounting system will have quality if accounting information from its information system is able to give contribution to fulfill information needed by management [24]. This explanation is supported by study of Komala [25], Rapina and Susanto[26] and Kanakriyah [27] showing the creation of accounting information having good quality is supported by the existence of accounting information system with good quality. Based on this information, the second hypothesis can be stated as follows.

H₂: Accounting information system quality will have a positive effect on information accounting quality.

4. RESEARCH METHOD

A. The Type of This Study

This study is classified into a verification research. According to Sugiyono [28], the verification research is based on positivism philosophy and is used to test the formulated hypotheses by using information from samples.

B. Population, Sample, and Sampling Method ³

Population in this study is from 114 commercial banks and their related parties, such as operation managers, employee in accounting employee and external users. One hundred and fourteen banks are used by referring to website of Financial Services Authority of Indonesia on <http://www.ojk.go.id/data-alamat-kp-bank>.

Bank-related parties are used in this study by referring to perspective of Morley & Parker [29] stating users of information system in the bank contain not only managers and employees but also external users.

To pick up the number of bank becoming sample (n) representing the number of bank population (N), we use Slovin formula with 10% margin of error (e) [30]. This formula can be seen in the first equation as follows.

$$n = \frac{N}{(1+Ne^2)} \dots\dots\dots (1)$$

Based on this formula, the number of samples is 53.27 ≈ 53 banks (rounded).

Unfortunately, parties becoming respondents from 53 banks do not fully give response. Only parties coming from 14 banks give it. Therefore, response rate based on the number of bank is 26.42%. This response rate is higher than minimal response rate for survey research of 20%. The minimal response rate refers to Hartono [31].

C. Method of data analysis

Data are analyzed by conducting structural equation model (SEM) based on variance. SEM based on variance is used because two reasons. Firstly, variables in this study are latent. It means variable are not able to directly measured so that to realize measurement, they need to be derived through items. Secondly, this SEM is suitable for the small number of respondents with the range between 30 and 100 [32].

It is essential to perform validity and reliability test when the study uses items that are available in questionnaire. According to Ghozali [32], valid items mean that they are able to reveal something that has to be measured. To measure the accuracy of the answers of respondents, we use confirmatory factor analysis by using average variance extracted (AVE) and loading factor [33]. Reliability test is used to ensure answers of respondents on items to be consistent. To detect the consistency of respondent answers, Cronbach Alpha value is used [32].

5. RESULTS AND DISCUSSION

A. Validity and Reliability Test Result

In this study, we employ confirmatory factor analysis to determine valid items for each latent variable: BPQ, AISQ, and AIQ. To detect validity of item group of BPQ, AISQ, and AIQ, AVE value is used. The result of AVE value for each latent variable can be seen in Table 1.

Table 1. AVE Value for BPQ, AISQ, AIQ (Beginning Condition)

Variable	Item	AVE
BPQ	BPQ1 – BPQ6	0.434
AISQ	AISQ1 –AISQ6	0.399
AIQ	AIQ1 –AIQ8	0.430

Source: Modified Output of Warp PLS

In Table 1, the values of AVE for each latent variables are lower than 0.5. It means, according to Sholihin & Ratmono [33], items are not valid. To make them valid, we remove items having loading factor value that is below 0.6 or equal to 0.6. After follow this step, AVE value for BPQ, AISQ and AIQ goes up and loading factor for items left is higher than 0.5 (see Table 2). It means the validity condition is fulfilled.

Table 2. AVE Value and Loading Factor of BPQ, AISQ, and AIQ (Final Condition)

Variable	Item	AVE Value	Loading factor value
Business Process Quality	BPQ1	0.541	0.783
	BPQ2		0.771
	BPQ4		0.739
	BPQ6		0.639
Accounting Information System Quality (AISQ)	AISQ2	0.637	0.721
	AISQ3		0.834
	AISQ4		0.835
	AISQ4		0.835
Accounting Information Quality (AIQ)	AIQ2	0.524	0.801
	AIQ3		0.615
	AIQ4		0.738
	AIQ5		0.634
	AIQ6		0.740
	AIQ6		0.740
	AIQ7		0.793

Source: Modified Output of Warp PLS

To perform reliability test, valid items are tested to get Cronbach Alpha value. According to Ghozali [32], valid items are reliable if Cronbach Alpha for group of valid items is higher than 0.7.

Table 3. Cronbach Alpha Value

Variable	Item	Cronbach Alpha
BPQ	BPQ1, BPQ2, BPQ4, BPQ6	0.715
AISQ	AISQ2, AISQ3, AISQ4	0.713
AIQ	AIQ2, AIQ3, AIQ4, AIQ5, AIQ6, AIQ7	0.815

Source: Modified Output of Warp PLS

From Table 3, it can be seen that Cronbach Alpha value for 4 items of BPQ is 0.715, for 3 items of AISQ is 0.713, for 6 items of AIQ is 0.815. Because three Cronbach Alpha values are higher than 0.7, valid items are reliable.

B. Estimation Result of SEM Based on Variance

After conducting validity and reliability test, the next step is estimating SEM based on variance. The estimation result of this SEM can be seen in Table 4.

Table 4. Estimation Result of SEM based on variance: The Effect of BPQ on AISQ and Effect of AISQ in AIQ

Panel A. The Effect of BPQ on AISQ		
	Path coefficient	Probability value
BPQ	0.556	<0.001
Panel B. The Effect of AISQ on AIQ		
	Path coefficient	Probability value
AISQ	0.691	<0.001

Source: Modified Output of Warp PLS

C. Hypothesis Testing Result

The first hypothesis states that business process quality will have a positive effect on accounting information system. This hypothesis is tested by comparing probability value of path coefficient of BPQ with 5% significance level. This probability value of this path coefficient can be seen in Panel A (see Table 4). In this panel, this probability value is < 0.001. Because this probability value is lower than 5% significance level, the first hypothesis is accepted.

The second hypothesis states accounting information system quality will have a positive effect on information accounting quality. This hypothesis is tested by comparing probability value

of path coefficient of AISQ with 5% significance level. This probability value of this path coefficient can be seen in Panel B (see Table 4). In this panel, this probability value is < 0.001. Because this probability value is lower than 5% significance level, the second hypothesis is accepted.

D. Discussion

The recognition of the first hypothesis means that business process quality has a significant positive effect on accounting information system quality. To create accounting information system having good quality, design of work needs to be implemented by bank. Therefore, this study confirm the statement of Turban & Volonino [23].

The recognition of the second hypothesis means that accounting information system quality has a significant positive effect on accounting information quality. Therefore, this study confirms research result of Komala [25], Rapina and Susanto [26], and Kanakriyah [27].

6. CONCLUSION & RECOMMENDATION

The purpose of this study is to test and analyze the effect of business process quality on accounting information system quality and the effect of accounting information system quality on accounting information quality. Based on test of two hypotheses related to the purpose, this study confirms that:

1. A significant positive effect of business process quality on accounting information system quality occurs.
2. A significant positive effect of accounting information system quality on accounting information quality happens.

Based on the conclusion, this study results two types of recommendation. The first is theoretical recommendation and the second is practical recommendation.

1. Theoretical recommendation is given to next researchers who are interested in this study topic. This study only uses business process quality and does not use knowledge of accounting managers and supports of top management, as Komala [25] utilizes, as factor affecting accounting information system. Next researchers are suggested inserting two factors that Komala [25] uses as additional factors impacting on accounting information system quality.
2. Practical recommendation is given to banks. There are two suggestions related to the second recommendation:
 - a. Business process quality can be increased by: (1) providing applications that are easy to be used so that they can reduce delay of works, (2) making software applications flexible to satisfy needs of users that always change, (3) arranging and setting correct procedures that are able to ensure the availability of financial data protection and needed records.
 - b. Quality of accounting information system can be increased by designing applications that are flexible and ready to be developed so that they are able to adapt change of environments related to financial regulations.

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