The International Academic Forum

# ABMC/ACPEL 2016

Art Center Kobe, Japan

iafor

"To Open Minds, To Educate Intelligence, To Inform Decisions"

The International Academic Forum provides new perspectives to the thought-leaders and decision-makers of today and tomorrow by offering constructive environments for dialogue and interchange at the intersections of nation, culture, and discipline. Headquartered in Nagoya, Japan, and registered as a Non-Profit Organization (一般社団法人) , IAFOR is an independent think tank committed to the deeper understanding of contemporary geo-political transformation, particularly in the Asia Pacific Region.

INTERNATIONAL

INTERCULTURAL

INTERDISCIPLINARY

iafor

# The Executive Council of the International Advisory Board

The Asian Business & Management Conference 2016

Official Conference Proceedings

ISSN: 2186-5914


The International Academic Forum (IAFOR)
Sakae 1-16-26-201
Naka Ward, Nagoya, Aichi
Japan 460-0008
ww.iafor.org

Table of Contents

# *Factors Affecting Decisions Concerning Pet-Related Service in Bangkok, Thailand*

Wanrudee Suksanguan, Faculty of Accountancy, Rangsit University, Thailand

The Asian Conference on Business & Management 2016
Official Conference Proceedings

**Abstract**
This research aims to study: (1) things that consumers want in pet malls; (2) information sources of consumers; and (3) criteria that consumers use to decide when choosing pet-related services. This is a quantitative research using questionnaire as the research instrument. Statistics used in the research are frequency, percentage, means, purposive sampling and accidental sampling. There were 400 participants in this research.
The research findings are as follows. (1) The things consumers wanted the most in pet malls were activities for pets, convenient parking spaces and reliable animal hospitals. (2) Information sources that were used the most were Facebook and the Internet, respectively. (3) Criteria that consumers used when choosing pet-related services were divided into two parts. (3.1) Pet hospitals – It was found that factors affecting hospital selections with the most average scores were treatment reliability, good services, and a team of competent physicians. (3.2) Pet shops – It was found that the top factors consumers considered when choosing products or services were quality of products and services, interesting and reasonable products, and reliable brands.

Keyword: pet malls, pet shops

## Introduction

Currently, the growth rate of business in selling products and services connected with pets in Thailand goes against economic trends. This indicates the increasing popularity of raising pets in Thailand. This is observable from the market value of pet-related businesses in Thailand with the continuous increase rate in relationship to the number of households. This is consistent with the results of the survey by the National Statistical Office. According to the findings, the number of households that raised the dogs and cats constitutes 20 percent of all households. The number of households in Bangkok Metropolitan area as of December 2013 totaled 2,593,827 households. Therefore, 20 percent of the total number of households i.e. 518,765 households raised the dogs. The numbers of one up to more than 10 dogs at most were raised per household. Besides, the number of households in Bangkok Metropolitan area and its vicinity has increased steadily. This can be observed from the increasing number of housing development and preference of the population for separation as nuclear family more and more. Thus, the number of pet dogs has increased steadily. The objectives of raising are diverse such as watching over the houses, looking after the property, raising for company until becoming important members of the families. The current behavior of the raising persons has changed, that is to say providing care attentively as children, descendants. As a result, the owners are willing to pay for their pets more and more, including the costs of food, health care, medical care, vaccinations and care for living conditions of pets. Consequently, the pet-related businesses have grown steadily in line with the market value figures connected with the pets approximating 22,000 million baht at present. The average growth is about 10-15 percent per year. The pet food market has the most market share worth 10,000 million baht, followed by pet-related service businesses with a total value of 7,000 million baht. In addition, there is also a business of selling pet products worth more than 5,000 baht. Obviously, the market value of over two billion baht makes many operators interested to invest in pet business. (Source: Major operators in pet business (2014) by Cavicorn Research Center)

Therefore, it is interesting to study the things wanted by the consumers to be available in the Pet mall, sources of information that reach the consumers and the factors that make the consumers buy goods and services. The objective is to serve as information for the use of entrepreneurs in business operations, which will cause success in investment.

## Research Objectives

1. Study the things wanted by the consumers to be available in the pet mall.
2. Study the media whereby the consumers receive information on products and services related to pets.
3. Study the factors used by the consumers for the decision to select pet-related services.

## Methodology

This study is characteristic of quantitative research by using the questionnaires with reliability already tested as a tool for data collection. The purposes are to describe the characteristics of the population and use the findings to plan investment in the businesses further. The details of the study are as follows.

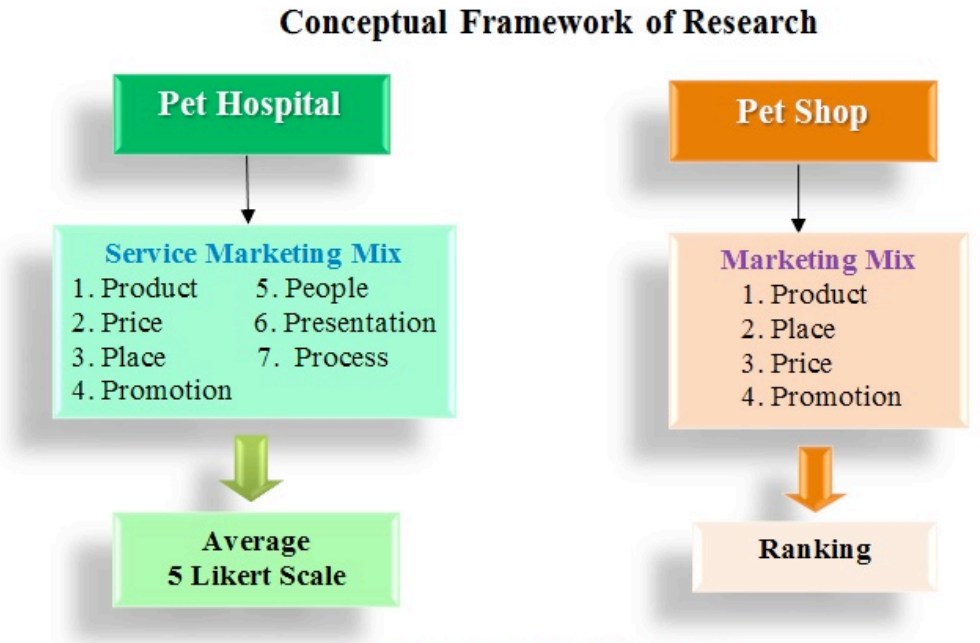



**Figure 1** Pet-related businesses


**Figure 2** Things wanted by the consumers to be available in the pet mall

- **Population and Representative Sample**

The population in this study was the population in Bangkok Metropolitan area and its surrounding provinces, which had pets and had ever used pet-related services. The number of population in Bangkok Metropolitan area totaled 5,689,200 people (registration statistical system June 2016). The sample size was determined by the finished table of Yamane (1993) at the reliability level of 95%, resulting in the sample size with reliability totaling 385 people and additional number of 15 persons. The representative sample totaled 400 people. The method of random sampling was used as follows.

Step 1 Choosing the research sample because this research project is the study to serve as information for the use of entrepreneurs in business operations related to pets, including the pet mall. Therefore, the sample was selected from consumer groups who came at the fully integrated Pet Expo on 29 May 2016.

Step 2 Use of Accidental Sampling and Purposive Sampling by fully handing out 400 sets of questionnaires to the representative sample of people who came to use services as specified.

- **Statistics for Use in Research**

Including frequency, percentage, average, minimum, maximum, standard deviation and hypothesis testing by using Pearson Chi-Square Tests

**Research Findings**

The data analysis of respondents revealed that the females and males constituted 69.6 and 30.4 percents, respectively. The respondents aged in the ranges of 20-30 years and 31-40 years represented 45.1 and 30.9 percents, respectively. The rest were aged under 20 years, accounting for 9.1 percent, aged 41-50 years, representing 9.6 percent, aged 51-60 years, accounting for 3.9 percent and aged over 61 years, representing 1.5 percent. The educational levels showed the undergraduate level, accounting for 67.4 percent, lower than the undergraduate level, representing 22.1 percent and the postgraduate level, constituting10.5 percent. As to occupations, the company employees constituted 44.7 percent; the students represented 23.4 percent; the business owners accounted for 13.5 percent; the government officers, state enterprise employees represented 13 percent; the maids and others, including consultants, lawyers, teachers representing 2 percent and 3.4 percent, respectively.

Media whereby the consumers got information about products and services related to pets: The types of media received by the consumers at the highest and high levels include the media from Facebook and Internet with the averages of 4.26 and 4.10, respectively. The media at moderate level are TV and others, namely the friends, shops and vet clinics with the averages of 3.30 and 2.69, respectively. The media at low level include magazines, radio, leaflets, brochures and newspapers with the averages of 2.391.992.43 and 2.18, respectively.

Results of testing the reliability of the questionnaires: The researcher tested the reliability of the questionnaires on the representative sample with the same characteristics as the population to study totaling 30 samples that had ever used the services of pet hospital and pet mall so as to determine Cronbach's Alpha. The levels of reliability were found to equal 0.749 and 0.936, respectively. It is considered that the reliability of the questionnaires was at high and very high levels. Thus, the 400 sets of participants were applied to the actual sample. The research results are as follows.

The findings indicated that the factors used by consumers for the decision to choose pet-related services include 2 types, namely the services of pet hospital and the shops that sell products and services related to pets.

- Factors used to decide on the hospital for taking the pets to cure: According to the research results, the respondents opined that all factors influenced the decision to take the pets to cure at high level as follows (1) credibility of treatment (average of 4.14, standard deviation of 0.970); (2) availability of good, impressive services (average of 4.11, standard deviation of 0.969); (3) proficient vet team highly expert and experienced (average of 4.05, standard deviation of 0.981); (4) ease of travel (average of 3.94,standard deviation of 1.196); (5) fees for treatment and services that are low and reasonably priced (average of 3.92, standard deviation of 1.048); (6) availability of modern equipment and instruments (average of 3.90,standard deviation of 0.976); (7) convenience and speed of services (average of 3.85, standard deviation of 0.999); (8) clean place with available facilities (average of 3.53, standard deviation 1.128); (9) people's recommendation or word of mouth (average of 3.51, standard deviation 1.151); (10) available service to accept taking care of pets (average of 3.47,standard deviation of 1.221); (11) others, including the availability of shuttle service, specialized doctors for treatment with safety (average of 3.86, standard deviation of 1.170).

- Factors used by the consumers to decide on the shops that sell products and services related to pets: The researcher asked the respondents to rank the factors used in selecting the shops that sell pet-related products and services. The findings indicated that the emphasized factors ranked first by percentage arrangement in descending order include (1) the quality of goods and services; (2) reasonable prices; (3) reliable brands; (4) the sales promotion of interest; (5) communication, sending information and activities organized for the customers regularly; (6) shop location and decoration; (7) available system of membership, point accumulation to be discounts. Each of the factors constitutes the percentage of 40.5, 26.8, 15.1, 12.3, 5.1, 3.7 and 2.7 respectively.

Things wanted by the consumers to be available in the pet mall: The researcher used questionnaires to assess the things wanted by service users in the pet center with the average 10 Likert Scale. The findings indicated that the things wanted by pet customers to be available in the mall at the highest level are as follows: (1) convenient parking service (average of 8.55, standard deviation of 2.051); (2) availability of reliable pet hospital (average of 8.46,standard deviation of 1.984); (3) available activities for pets (average of 8.22, standard deviation of 5.143) and at high level, including (4) availability of pet-related products and services in an integrated way such as pet hospital, Pet shop, Pet cafe, Pet Farm, Pet Spa, Grooming, pet toilet (average of 8.18, standard deviation of 2.129); (5) availability of multi-purpose yard or public park and exercise equipment for pets (average of 8.14, standard deviation of 2.216); (6) service for accepting taking care of and pet health restoration (average of 8.14,standard deviation of 2.095; (7) availability of restaurant that allows the pets and owners to have a meal together (average of 7.95, standard deviation of 2.336); (8) availability of pet lover club(average of 7.93,standard deviation of 2.086); (9) availability of pet training center (average of 7.89, standard deviation of 2.353); (10) being the mall where the pets and the owners can do activities together (average of 7.70, standard deviation of 2.404); (11) availability of swimming pool for pets (average of 7.68,standard deviation of 2.399); (12) available Supermarket for the owners (average of 7.47, standard deviation of 2.391); (13) availability of other shops

to serve the owners in an integrated way for the whole family (average of 7.14,standard deviation of 2.439); (14) available hotel where people and pets can stay together (average of 7.39, standard deviation of 2.595). The things wanted at moderate level include (15) kids 'corners such as learning activities, amusement park and playthings (average of 6.38, standard deviation of 2.758).

**Discussion**

For the findings about the factors affecting the decision to use pet-related services in Bangkok Metropolitan area and its surrounding provinces, there are the issues as remarks which can be used to discuss the study results as follows.

1. Media whereby the consumers got information about pet-related products and services: The findings indicated that the consumers received information from online advertising media, i.e. Facebook and Internet at the highest and high levels, respectively. This is consistent with the current situation where online media become popular with continuous progress and tendency to gain in popularity in the future due to the increasing influence on people and society. Especially, Facebook is a social network, which is used most frequently by Thai people up to 92.1 percent (from the survey on the behavior of Internet users in Thailand in 2015). There were more than 38 million users of Internet (January 2016).

2. Factors used by the consumers for the decision to choose pet-related services, including

2.1 Decision on the hospital to take pets for curing. The findings indicated that all factors influenced the decision at high level. The first three factors with the highest averages include: (1) credibility of treatment; (2) availability of good, impressive services and (3) proficient vet team highly expert and experienced. This accords with the research of Sirada Sakulbueng, Wiroj Jangsombadsiri and Ploypapas Pipatkitibodee (2011). Similarly, an important feature of marketing mix for pet hospital service business is personnel or staff. This is considered to be ranked among the first factors on which the consumers will focus for choosing the service. It was found that such 3 factors mentioned are all associated with the persons. This is consistent with business service that relies on the persons for business operation.

2.2 Decision on the shops that sell pet-related products and services:
According to the findings, the top- ranked factors on which emphasis is placed by arrangement in descending order include: (1) the quality of goods and services; (2) reasonable prices; (3) reliable brands ; (4) sales promotion of interest; (5) communication, sending information and activities organized; 6) shop location and decoration 7) available system of membership. All 7 factors used by the consumers for making decisions were arranged into marketing mix and prioritization in descending order. It was found that the consumers focused on products, pricing, marketing promotion and distribution, respectively. This is consistent with the research of Nittana Tanitthanakorn and Umarin Sreesasiwimol (2011) who found that the products, prices and marketing promotion affect the decision to use services. Furthermore, the current situation involves more intensity of marketing competition. Many new products of pets emerge with both standard and non-standard in the country and abroad, including major and small manufacturers. Besides, the prices of

products differ much, depending on the locations and the distributors. As a result, the consumers in the information era become cautious about checking the quality and product prices primarily for the decision to buy.

3. Things wanted by the consumers to be available in pet mall at the highest level include: (1) convenient parking service; (2) availability of reliable pet hospital; (3) available activities for pets. The above findings indicate that today's society runs into traffic problems. Particularly, parking is an important matter that the entrepreneurs must facilitate. This is because taking the pets to use services needs travel by private car. Additionally, a thing indispensable for the pet mall is the reliable pet hospital. This is consistent with the findings about the factors influencing the decision to choose the hospital for taking pets to cure mentioned above. This is due to being considered as the fourth necessary factor. Observation inevitably revealed that many people use services at the pet hospital where the veterinarians are proficient, renowned for the treatment of diseases with need to queue up, wait for a day. In the same way, the service users also need available activities for pets. It was found that a large number of pet lovers are interested to visit the event or take their own pets to join every time of the pet-related activity organized, which is not being secondary to other fairs. The researcher received information from observation, attending the events at least 5 times in the past two years and following news from Facebook throughout.

**Conclusions**

The objectives of research into the factors affecting the decision to choose pet-related services in Bangkok Metropolitan area and its surrounding provinces are as follows: (1) Study the things wanted by the consumers to be available in the pet mall; (2) Study the media whereby the consumers receive information on products and services related to pets; (3) Study the factors used by that consumers to decide to choose the services related to pets. The methodology of quantitative research was used with questionnaires. The statistical tools used in the study include frequency, percentage, average, standard deviation and Pearson Chi-Square samples. The methods of Purposive Sampling and Accidental Sampling were used. The questionnaires were handed out to 400 consumers who came at Pet Expo on 29 May 2016.

The research results showed that: (1) the things wanted by the consumers to be available in pet mall at the highest level include available activities for pets, convenient parking facilities, availability of reliable pet hospital. (2) The sources of information, publicity about pets of which the consumers were aware at the highest and high levels include the media from Facebook and Internet, respectively. (3) The factors used by the consumers to decide on pet-related services are divided into two parts which are (3.1) Pet hospital: It was found that all 11 factors had the averages at high level. However, the first 3 factors with the highest averages are reliability of curing; availability of good and impressive services and the vet team that is highly expert and experienced; (3.2) For the shops selling products and general services, it was found that the top - ranked factors taken into account by consumers for the decision to buy goods and services include the quality of goods and services, reasonable prices, reliable brands, and sales promotion of interest.

## Suggestions for Further Studies

1. It is advisable to study the ability to pay for the expenses related to pets as to whether this is associated with the income of pet owners or not.
2. It is a good idea to study the pet-related business operators in various fields, SWOT Analysis as well as financial and investment analysis.

## References

Kotler, Philip (2003). *Marketing Management.*11th edition. Upper Sanddle Riveir, New Jersey: prentice Hall.

Nattha Ouimanachai (2011). Online advertising media guidelines from the past to the future. *Journal of Management*. 31st Year No. 2 (April-June 2011). Pages 167-172.

Nittaya Thanitthnakorn and Umarin Sri Sasiwimol (2011). Decision to use the Services related to Pets in Bangkok Metropolitan Area and its Surrounding Provinces. *Journal of Management Science and Information Science*. 6th Year No.2 (April-September 2011). Pages 42-55.

Sirada Kulbueng, Wiroj Jangsombatploy and Ploypapas Pipatkitibodee (2011). *Business Plan Unrak Pet Care Clinic.* Course for graduate student business plan, Thammasat University.

## Data from Electronic Media

Administration and Registration Office, Office of the Permanent Secretary for the Bangkok Metropolitan Administration (2013, December). *Statistical report Number of population and houses in Bangkok Metropolitan area classified by Sub-districts and Districts*. Retrieved on 6 July 2016 from http://www.bmadatacenter.pop_on_june_50.

Electronic Transactions Development Agency (2015, August). *Results of Survey on Users' Behavior Internet in Thailand Year 2015*. Retrieved on 5 July 2016 from http://www.it24hrs.com/2015/Thailand - internet-user-profile-2015

Electronic Transactions Development Agency (2016, January). *Updated figures of Internet users and Social Media in Thailand (January 2016)*. Retrieved on 5 July 2016 from http://www.makewebeasy.com/blog/2016/02/user-internet/

Kasikorn Research Center (2014). *Major Operators in Pet Business*. Retrieved on 25 June 2016 from http://kasikornresearch.com and http://greenshopcafe.com.

National Statistical Office (2016, April). *Statistics on the Number of Population and Houses at Database Currently*. Retrieved on 6 July 2016 from http://www.dopa.go.th.

Siam Commercial Bank (2013, October). *Business for Pets of Urban People.* Retrieved On 5 July 2016 from http://www.scbsme.scb.co.th

iafor

# *The Impact of Audit Committee Effectiveness on Audit Delay for Listed Commercial Banks in Indonesia*

Triana, Universitas Gadjah Mada,
Awardee of Indonesia Endowment Fund for Education, Indonesia

The Asian Business & Management Conference 2016
Official Conference Proceedings

**Abstract**

One of the objectives of financial reporting is to provide useful accounting information that will assist users in decision making. This information is required to be available within a short period of time from the end of reporting period. Audit committee plays an important role in providing timely accounting information. The purpose of this research is to examine the impact of audit committee effectiveness on audit delay.

This research used 29 commercial banks listed in Indonesia Stock Exchange (IDX) as samples. Data used in this research are secondary data sourced from annual report and financial statement posted in IDX or banks' website. The statistic used in this research is tested using multiple regression analysis. Independent variables in this research are audit committee size, audit committee independence, audit committee meeting and audit committee expertise. The control variables are company size, auditor opinion, audit firm quality, profitability and leverage. The dependent variable is audit delay.

The result of research shows that audit committee size, audit committee meeting, auditor opinion, audit firm quality are negatively significant on audit delay. Other control variables such as company size and leverage are positively significant on audit delay. While audit committee independence and audit committee expertise are insignificant on audit delay.

Keywords: Audit delay, audit committee, financial reporting

## Introduction

Financial statements contained accounting information in which a company communicates its accounting information to outside parties. Accounting information in financial statement provides a company's history quantified in money terms to users (Kieso *et al*., 2011). The users of financial statement are direct users and indirect users. Direct users consist of owners, stockholders, management teams, tax regulators, labor unions and customers. Indirect users consist of analysts, financial consultants, capital markets, lawyers, regulators and society (Belkaoui, 2004).

According to Kieso *et al*. (2011), accounting information is useful when it comply with qualitative characteristics of accounting information that comprises of fundamental qualities and enhancing qualities. Both qualities are the bridge between the objectives, recognitions and measurements of accounting. Fundamental qualities consist of relevance and faithful representation. In addition, accounting information would be more useful when it presented on a timely basis.

Timeliness is one of the enhancing qualities in accounting information. The importance assigned by the profession to timeliness is manifested by the sense of urgency that makes accountants work a significant amount overtime to complete annual report (Givoly & Palmon, 1982). Thus, the need for timeliness in financial reporting is recognized by both government and profession.

According to BAPEPAM dan LK in Kep-364/BL/2011 about timeliness of financial reporting for public listed company mentioned all Indonesian Public Listed Companies' annual report shall be reported at the end of third month after the issuance of independent auditor report. Thus, audit delay has been a concern. The attributes suggest financial statements shall be made available to public within a reasonable period of time close of a company's financial year-end, otherwise the usefulness of financial statements would be impaired (Ika & Ghazali, 2012).

Timely financial reporting contributes to the prompt and efficient performance of stock markets in their pricing and evaluation function. Timely reporting helps to mitigate insider trading, leaks and rumours in the market (Owusu & Ansah, 2000). A late publication of financial statement indicated a negative signal to firms and made audit process longer (Febrianty, 2011). Audit delay will make stockholders and prospective stockholders delay their transactions (Ng & Tai, 1994).

Numerous researches in determinant of audit delay has been conducted with the focus on audit features and companies' quality. Research that are examining the influence of firm's corporate governance structure on audit delay has been forthcoming with overwhelming focus on board of directors. There are internal and external mechanisms of corporate governance. One of the important mechanisms is audit committee. Tauringana *et al*. (2009) and Afify (2009) examined audit committee was negatively significant to audit delay. Ika and Ghazali (2012) also indicated audit committee effectiveness is significantly negative on audit delay.

The objective of this study is to address the imbalance of literatures by examining the association between audit committee effectiveness and audit delay found in the past

literatures as the most significant factors. The audit committee effectiveness characteristics examined in this study are audit committee size, audit committee independence, audit committee meeting and audit committee expertise. Result of this study will assist public listed commercial banks and regulators in putting more attention on the attributes.

The remainder of this paper is organized as follows. The next section reviews the literature of audit committees and audit delay and is followed by hypotheses development. The research methodology is then outlined and followed by research findings on descriptive statistics and main results. The final is the conclusion.

**Literature Review and Hypotheses Development**

Prior studies have determined that numerous companies' attributes have adversely impact on audit delay (Givoly & Palmon, 1982; Asthon *et al*., 1987; Bamber *et al*. 1993; Jaggi & Tsui, 1999; Leventis *et al*. 2005; Ishak *et al*. 2010). Prior literatures mostly researched on the issue of the relationship between the timing of annual earnings announcement and companies' characteristics, such as company size (proxied by total assets, total revenues, total sales), profitability (proxied by return on assets and return on equity), audit firm quality, audit opinion (Asthon *et al*., 1987; Carslaw & Kaplan, 1991; Ng & Tai, 1994; Lawrence and Glover, 1998; Owusu Ansah, 2000; Ahmed, 2003; Ettredge *et al*., 2006; Ahmad & Abidin, 2008; Al-Ajmi, 2008; Lee & Jahng, 2008; Aubert, 2009; Turel, 2010; Banimahd *et al*., 2012; Abernathy *et al.*, 2014; Sultana *et al*., 2015; Chan *et al*., 2016).

Recent researches on audit delay has determined the relationship between audit committee effectiveness and audit delay (Taurigana *et al*., 2008; Afify, 2009; Ishak *et al*., 2010; Nor *et al*., 2010; Hashim & Rahman, 2011; Ika & Ghazali, 2012; Ismail *et al*., 2012; Shukeri & Islam, 2012; Abernathy *et al*., 2014; Sultana *et al*., 2015). Ika and Ghazali (2012) was conducting the research in Indonesia using 211 non-financial companies' audited financial statement in Indonesian Stock Exchange (IDX).

Audit committee in Indonesia is relatively new as it has been regulated after the occurrence of 1997 Asian financial crisis. According to BAPEPAM rule Kep-643/BL/2012 dated December 7, 2012 on the Audit Committee Establishment and Task Execution Guidelines, audit committee shall comprise at least three members, one of whom shall be an independent commissioner and concurrently the chairman of audit committee, while the others shall be external parties. In addition, at least one of the audit committee shall have accounting and finance education background or skills. BAPEPAM also rules audit committee independence, authority and meeting. In terms of meeting, audit committee shall have meeting at least once each quarter in a year. BAPEPAM also rules in Kep-346/BL/2011 concerning financial reporting mentioned that companies shall have reported financial statements to BAPEPAM in a yearly manner with a maximum on the end of third month after the end of accounting period.

A survey of audit committee effectiveness on audit delay in Indonesia indicated that more audit committee members could increase audit committee independence, audit committee expertise. Moreover, more audit committee meetings could increase timeliness of financial reporting (Ika & Ghazali, 2012). While Nor *et al*. (2010) supported audit committee effectiveness is significant negative on audit delay. It is a

mandatory for Indonesian listed companies to comply with audit committee rules in order to increase financial reporting quality.

**Audit Committee Characteristics and Audit Delay**

Audit Committee Size

BAPEPAM rule Kep-643/BL/2012 concerning on the number of audit committee shall comprise of at least three members. Potential problems in financial reporting process are more likely to arise and resolved with larger audit committee. Nor *et al*. (2010) examined that audit committee size is negatively significant on audit delay. While Ishak *et al*. (2010) indicated number of audit committee has no impact to audit delay. Ika and Ghazali (2012) resulted a larger audit committee size will shorten audit lag, thus financial statements could be more timely reported. The same result was generated by Shukeri and Islam (2012). Sultana *et al*. (2015) showed audit committee size is insignificant on audit delay. Thus, the following hypothesis is proposed in examining the relationship between audit committee size and audit delay.

**$H_1$**: Audit committee size is negatively significant associated with audit delay.

Audit Committee Independence

According to agency theory, audit committee independence could help the principals to monitor the agents' activities and reduce benefits from witholding information. Audit committee that comprises with more independent directors are more reliable and would be appropriate to represent the rights and privileges for all stakeholders (Hashim & Rahman, 2011).

Audit Committee Charter Kep-643/BL/2012 mentioned independent audit committee members shall conduct its role professionally and independently and do not accept or perform any intervention from or to other parties. The audit committee members are independent from shareholders, Board of Commissioners and Board of Directors. Audit committee members come from outside of the companies and do not have any interest or privacy that may cause negative impacts and conflict of interests within the company.

Afify (2009) examined an independent audit committee member would be free from management intervention and could reach a timely financial reporting. Independent audit committee members could assist principals to monitor agents' activities and reduce benefits from witholding information Hashim and Rahman (2011). Afify (2009), Hashim and Rahman (2011), Ika and Ghazali (2012), Nigar *et al*. (2015) mentioned audit committee independence is significant negative on audit delay. On the other hand, Nor *et al*. (2010) mentioned audit committee independence is insignificant on audit delay. Thus, the following hypothesis is proposed in examining the relationship between audit committee independence and audit delay.

**$H_2$**: Audit committee independence is negatively significant associated with audit delay.

Audit Committee Meeting

In accordance with the Audit Committee Charter, audit committee shall hold meeting as necessary at least once in three months led by chairman of audit committee. The number of audit committee meeting is significant negative to audit delay, which means more meetings lead to timely financial reporting (Afify, 2009). Nor *et al*. (2010) in their research on Bursa Efek Malaysia examined a significant negative relationship to audit delay. Ika and Ghazali (2012) and Abernathy *et al*. (2014) examined the same implication in IDX and Standard and Poor, respectively.

Conversely, a significant positive relationship of audit committee independence on audit delay was examined by Shukeri and Islam (2012). Hashim and Rahman (2011), Ismail *et al*. (2011), and Sultana *et al*. (2015) do not examine a significant result between audit committee meeting and audit delay. Thus, the following hypothesis is proposed in examining the relationship between audit committee meeting and audit delay.

**$H_3$**: Audit committee meeting is negatively significant associated with audit delay.

Audit Committee Expertise

Audit Committee Charter mentioned at least one of the audit committee shall have accounting and finance education background or skills. Audit committee member with more expertise would be more concerned to financial reporting quality in company (Hashim & Rahman, 2011). Taurigana *et al*. (2009) in Nairobi Stock Exchange (NSE) examined that audit committee expertise is negatively significant to audit delay. This is because experts are likely to bear on management to release earlier financial statements.

Afify (2009), Hashim *et al*. (2011), Ika and Ghazali (2012), Shukeri and Islam (2012), Abernathy *et al*. (2014) and Sultana *et al*. (2015) investigated a negative significant relationship between audit committee expertise to audit delay. Meanwhile, Nor *et al*. (2010) and Ismail *et al*. (2012) do not find any significance on both. Thus, the following hypothesis is proposed in examining the relationship between audit committee expertise and audit delay.

**$H_4$**: Audit committee expertise is negatively significant associated with audit delay.

**Control Variables**

Company Size

The influence of company size has featured in many studies and has been mostly found to be negatively significant to audit delay (Ashton *et al*., 1989; Carslaw & Kaplan, 1991; Bamber *et al*., 1993; Ng & Tai, 1994; Schwartz & Soo, 1996; Ettredge *et al*. 2006; Ansah & Leventis, 2006; Al-Ajmi, 2008; Ponte *et al*., 2008; Lee *et al*., 2008; Lee & Jahng, 2008; Tauringana *et al*., 2009; Kartika, 2009; Lee *et al*., 2009; Nor *et al*., 2010; Hashim & Rahman, 2011; Ghanem & Hegazy, 2011; Fagbemi & Uadiale, 2011; Shukeri & Islam, 2012; Sultana *et al*., 2015; Alfraih, 2016; Sakka & Jarboui, 2016). Meanwhile in some researches, company size is positively significant

to audit delay (McLelland & Giroux, 2000; Ahmad *et al*., 2005; Wang & Song, 2006; Banimahd *et al*., 2012; Pourali *et al*., 2013; Abernathy *et al*., 2014). Previous studies from Givoly and Palmon (1982); Ashton *et al*., (1987); Knechel & Payne (2001); Leventis *et al*., (2005); Wu *et al*., (2008), Mouna and Anis, (2013); Chan *et al*., (2016) found no significant relationship between company size and audit delay. Thus, the following hypothesis is proposed in examining the relationship between company size and audit delay.

**$H_5$**: Company size is negatively significant associated with audit delay.

Auditor Opinion

There have been studies of auditor opinion to audit delay. Lee and Jahng (2008) found auditor opinion is negatively significant to audit delay. The results are supported by Jaggi and Tsui (1999) and Shukeri & Islam (2012). Chan *et al*. (2016) found auditor opinion is positively significant to audit delay. The results are supported by Ashton *et al*. (1987); Bamber *et al*. (1993); Schwartz & Soo, (1996); Leventis *et al*. (2005); Ismail *et al*. (2012); Pourali *et al*. (2013). Conversely, Shulthoni (2012) found auditor opinion has no impact to audit delay. Thus, the following hypothesis is proposed in examining the relationship between auditor opinion and audit delay.

**$H_6$**: Auditor opinion is negatively significant associated with audit delay.

Audit Firm Quality

Previous studies are mostly found no significance between audit firm quality and audit delay (Ng & Tai, 1994; Ahmad *et al*., 2005; Al-Ajmi, 2008; Ponte *et al*., 2008; Khasharmeh & Aljifri, 2010; Hashim & Rahman, 2011; Ika & Ghazali, 2012). Nor *et al*. (2010) and Shukeri & Islam (2012) showed audit firm quality is negatively significant to audit delay. Wang & Song (2006), Lee *et al.* (2009) and Turel (2010) found a significant positive relationship between audit firm quality and audit delay. Thus, the following hypothesis is proposed in examining the relationship between auditor firm quality and audit delay.

**$H_7$**: Audit firm quality is negatively significant associated with audit delay.

Profitability

We also found profitability is significant negative on audit delay (Jaggi & Tsui, 1999; Ansah, 2000; Lee & Jahng, 2008; Afify, 2009; Turel, 2010; Alfraih, 2016). However, Leventis *et al*. (2005); Ettredge *et al*. (2006); Tauringana *et al*. (2009); Hashim & Rahman (2011); Banimahd *et al*. (2012); Wang and Song (2006) examined there is a significant positive relationship between profitability to audit delay. Oladipupo (2011), Francis (2012) and Banimahd *et al*., (2012) examined an insignificant association between profitability and audit delay. Thus, the following hypothesis is proposed in examining the relationship between profitability and audit delay.

**$H_8$**: Profitability is negatively significant associated with audit delay.

Leverage

Leverage is mostly indicated as insignificant on audit delay (Jaggi & Tsui, 1999; Ansah, 2000; Leventis *et al*., 2005; Tauringana *et al*., 2009; Fagbemi *et al*., 2011; Pourali *et al*., 2013; Mouna & Anis, 2013; Abernathy *et al*., 2014 and Sultana *et al*., 2015). Ghanem and Hegazy (2011) found there is a significant negative association between leverage and audit delay in first year in Kuwait Stock Market. While the significant positive relationship examined by Al-Ajmi (2008) and Lee *et al*. (2008). Thus, the following hypothesis is proposed in examining the relationship between leverage and audit delay.

**$H_9$**: Leverage is positively significant associated with audit delay.

## Research Methodology

### Sample

The sample covers commercial banks listed Indonesian Stock Exchange (IDX) from year 2008 to 2015. The total number of bank listed in IDX until first six months in 2016 is 45 banks. The samples were chosen based on following criteria. First, samples comprise of all Indonesian commercial banks annual reports from 2008 to 2015. Second, all annual reports must have available data of all variables. Meanwhile, 15 public listed banks were removed because do not comply with the first criteria and 1 public listed company's data was not available in the annual report. Finally, 29 Indonesia commercial banks are the sample. Thus, 232 data were used to determine the impact of audit committee attributes on audit delay.

Table 1. Sampling Procedure

| Description | No. of banks |
|---|---|
| Commercial banks listed on IDX | 46 |
| Commercial banks which annual reports were available in IDX or bank's website | 30 |
| Deduct | |
| Companies with lacking some data of interest | 1 |
| Usable sample commercial banks | 29 |
| Number of years | 8 |
| Total data observed | 232 |

### Research Model

The purpose of study is to examine whether the audit committee effectiveness have an association with timeliness of financial reporting. Thus, dependent variable is audit delay which is defined as the number of days between a bank's financial year-end and the day in which bank releases its audited financial statements. The main independent variables were constructed by audit committee effectiveness. Other variables such as company size, auditor opinion, audit firm quality, profitability and leverage are control variables in this study. The data obtained for these independent variables are from annual reports.

A multiple regression model was used to test the association between dependent variable of audit delay (AUD) and independent variables of audit committee size (ACSIZE), audit committee independence (ACIND), audit committee meeting (ACMEETING), audit committee expertise (ACEXP) and control variables of company size (SIZE), auditor opinion (OPINION), audit firm quality (BIG4), profitability (ROA) and leverage (LEV) shows in equation 1 and equation 2.

$$AUD = f(Corporate\ governance\ variables + Control\ variables) \quad (1)$$

$$AUD = \beta 0 + \beta ACSIZE + \beta ACIND + \beta ACMEETING + \beta ACEXP + \beta SIZE + \beta OPINION + \beta BIG4 + \beta ROA + \beta LEV + e \quad (2)$$

Figure 1. The research framework and variables used

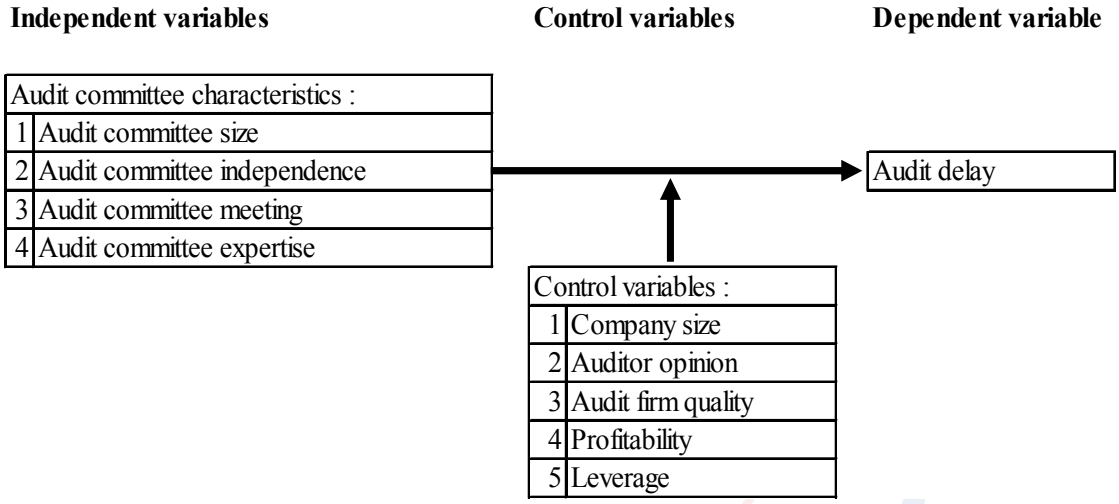



Table 2. Definition of Variables and Expected Sign

| Variables | | Expected Sign | Measurement |
|---|---|---|---|
| Dependent variables | | | |
| AUD | Audit Delay | | Number of days between financial year ended and the date of a company audited financial statement is received by IDX |
| Independent variables | | | |
| ACSIZE | Audit committee size | - | Number of audit committee members |
| ACIND | Audit committee independence | - | Proportion of independent directors on audit committee |
| ACMEETING | Audit committee meeting | - | Number of meeting held by audit committee during the year |
| ACEXP | Audit committee expertise | - | Proportion of audit committee member who have accounting or related financial expertise |
| Control variables | | | |
| SIZE | Company size | - | Natural log of total assets |
| OPINION | Auditor opinion | - | 1, if bank received unqualified audit opion<br>0, otherwise |
| BIG4 | Audit firm quality | - | 1, if auditor is one of Big Four auditor<br>0, otherwise |
| ROA | Profitability | - | Net income attributable to shareholders divided by total assets |
| LEV | Leverage | + | Total liabilities divided by total assets |

## Empirical Results

### Descriptive Statistics

Descriptive statistics of variables are presented in Table III. The overall results of this study indicate the total interval of time between the end of financial year and the audit report date with average 66 days. From 232 samples of public listed bank in Indonesia, the minimum interval is 11 days and the maximum interval is 139 days. This means public listed commercial banks in Indonesia will take about two months on average for annual reporting of their financial statements. This study also indicated that most of Indonesian commercial banks has met the regulatory deadline and treated timeliness of financial reporting as an important matter.

Table III. Descriptive Statistics

| Variables | *N* | *Minimum* | *Maximum* | *Mean* | *Std. Deviation* |
|---|---|---|---|---|---|
| Audit committee size | 232 | 2.00 | 8.00 | 4 | 1.20083 |
| Audit committee independence | 232 | .25 | 1.00 | 0.9057 | .18557 |
| Audit committee meeting | 232 | 1.00 | 46.00 | 13 | 8.58467 |
| Audit committee expertise | 232 | .67 | 1.00 | 0.9665 | .09020 |
| Company size | 232 | 1,359,880.32 | 910,063,409.00 | 106,853,212.13 | 172,173,298.51 |
| Profitability | 232 | 0.00 | .05 | .0188 | .01241 |
| Leverage | 232 | .73 | 1.27 | .8850 | .04720 |
| Audit delay | 232 | 11.00 | 139.00 | 65.8405 | 22.08475 |
| Valid N (listwise) | 232 | | | | |

Audit committee in Indonesia has complied with Audit Committee Charter which concerns audit committee member shall comprise at least three person. The result of 4 members is slightly higher than Nor *et al*. (2010), Ishak *et al*. (2010), Shukeri and Islam (2012). All Indonesian listed commercial banks have independent commissioner that does not have interest in bank. The result shows most Indonesian commercial banks had almost fully complied with the audit committee independence. This result is similar to Hashim and Rahman (2011) with audit independence of 93%, but much higher than Nor *et al*. (2010).

Most Indonesian commercial banks had meeting more than the minimum meeting as regulated. There are still some banks that have not yet complied with the rules. Bursa Malaysia on Hashim and Rahman (2011) and Shukeri and Islam (2012) had more meeting than Indonesia. Audit committee is also ruled to have at least one member with accounting and finance background. Indonesian listed commercial banks had complied with this rules as well. This result is similar with Sultana *et al*. (2015). Result in this study is higher than Afify (2009), Nor *et al*. (2010), Hashim and Rahman (2011) and Shukeri and Islam (2012).

The average of Indonesian listed commercial banks is relatively big with the total assets of IDR 106,853.2 trillion. The maximum of bank's total asset was IDR 910,063.409 trillion which is belong to PT Bank Mandiri, Tbk in year 2015. While the minimum total asset was IDR 1,359.880 trillion which is belong to PT Bank of India Indonesia, Tbk in year 2008. The profitability ratios were relatively low with an average of 1,88% and the maximum of 5%. This result has indicated that Indonesia

commercial banks do not generate huge amount of profit in terms of return on assets. However, the leverage ratios with the average of 88,50% is high because most of bank's assets were covered by liabilities.

Table IV Frequency Table

| Variables | Categories | Frequency | Percent |
|---|---|---|---|
| Auditor Opinion | 1 = Unqualified audit opinion | 209 | 90.09% |
| | 0 = Otherwise | 23 | 9.91% |
| Audit Firm Quality | 1 = Audited by Big Four | 164 | 70.69% |
| | 0 = Otherwise | 68 | 29.31% |

In terms of audit opinion, almost all Indonesian listed commercial banks had unqualified independent auditor opinion (90.09%) and over than average commercial banks (70.69%) were audited by Big Four audit firms such as Pricewaterhouse Cooper, Ernst and Young, Deloitte and KPMG. This served as a good signal to commercial banks financial reporting.

## Correlation Analysis

Table V shows correlation among dependent variable, independent variables and control variables. The result shows there is a negative correlation between audit committee size, audit committee meeting, company size, auditor opinion, audit firm quality, and profitability to audit delay. Conversely, leverage has positive correlation to audit delay. It is evidence from Table V that the correlation between variables indicate no severe multicollinearity problems. The variance inflation factor (VIF) as presented in Table VI shows this study does not have multicollinerarity problem.

Table V Correlation Matrix Table

| | AUD | ACSIZE | ACIND | ACMEETING | ACEXP | SIZE | OPINION | BIG4 | ROA | LEV |
|---|---|---|---|---|---|---|---|---|---|---|
| AUD | 1 | | | | | | | | | |
| ACSIZE | -0.423** | 1 | | | | | | | | |
| ACIND | 0.113 | -0.449** | 1 | | | | | | | |
| ACMEETING | -0.348** | 0.304** | 0.045 | 1 | | | | | | |
| ACEXP | -0.008 | 0.017 | -0.054 | 0.123 | 1 | | | | | |
| SIZE | -0.473** | 0.599** | -0.155* | 0.561** | 0.106 | 1 | | | | |
| OPINION | -0.169** | -0.013 | 0.008 | -0.05 | -0.069 | -0.007 | 1 | | | |
| BIG4 | -0.406** | 0.323** | -0.106 | 0.361** | 0.069 | 0.568** | 0.103 | 1 | | |
| ROA | -0.225** | 0.292** | -0.295** | 0.151* | 0.083 | 0.474** | 0.057 | 0.293** | 1 | |
| LEV | 0.247** | -0.076 | 0.126 | 0.066 | 0.063 | -0.007 | -0.234** | -0.223** | -0.276** | 1 |

**Note :** *significant at the 0.05 level (2-tailed) and **0.01 level (2-tailed). All variables are defined in Table II.

## Results of Multiple Regression

The adjusted $R^2$ of 32.86 percent indicated the model was capable on explaining 32.86 percent of the variability in the audit delay in sample companies under this study. The adjusted $R^2$ is higher than Nor *et al*. (2010), Ika and Ghazali (2012), Shukeri and Islam (2012), Abernathy *et al*. (2014). The model is highly significant ($F$-statistic = 13.5597, $p < 0.00$). The $F$-ratio indicates that the model significantly explains the variations of audit delay in Indonesian commercial banks.

Table VI shows multiple regression results. Two audit committee characteristics, namely audit committee size and audit committee meeting have negative significant association with audit delay. The result is consistent with evidence provided by Nor *et al*. (2010), Ika and Ghazali (2012), and Abernathy *et al*. (2014). Shukeri and Islam (2012) examined larger audit committee size and regular audit committee meeting able to ensure strong internal control in company, thus reduce the business risk and eventually reduce the time taken by external auditor to complete audit work. Hence, hypothesis 1 (audit committee size) and hypothesis 3 (audit committee meeting) are accepted. The result of audit committee meeting is also consistent with Afify (2009).

Although audit committee independence is negatively correlated to audit delay and audit committee expertise is positively correlated to audit delay, neither of variables are statistically significant. The finding does not support hypothesis 2 (audit committee independence). Informed by prior literature Nor *et al*. (2010) showed that audit committee independent is not significant to audit delay. Hence, the independency of audit committee does not really support timeliness.

The finding does not support hypothesis 4 (audit committee expertise). Audit committee expertise is insignificant on audit delay. Banking systems is more tight and procedural than another institution. Banks were aware about this matter before the rule exist. Consequently, bank staffs are following bank's code of conduct, thus they are independent and do not have any significant impact on audit delay. This finding is consistent with Nor *et al*. (2010) and Ismail *et al*. (2012). Hypothesis 2 and 4 are rejected.

Table VI Multiple Regression Analysis

| | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| (Constant) | 26.3807 | 30.8531 | | 0.8550 | 0.3934 | | |
| **Audit committee characteristics :** | | | | | | | |
| ACSIZE*** | -4.6474 | 1.3059 | -0.2527 | -3.5588 | 0.0005 | 0.5765 | 1.7345 |
| ACIND | -6.2648 | 7.9266 | -0.0526 | -0.7903 | 0.4302 | 0.6552 | 1.5261 |
| ACMEETING* | -0.3188 | 0.1767 | -0.1239 | -1.8041 | 0.0726 | 0.6161 | 1.6230 |
| ACEXP | 6.7818 | 13.4891 | 0.0277 | 0.5028 | 0.6156 | 0.9577 | 1.0442 |
| **Control variables :** | | | | | | | |
| SIZE** | 0.0000 | 0.0000 | -0.2084 | -2.5263 | 0.0122 | 0.4271 | 2.3414 |
| OPINION* | -7.3981 | 4.1653 | -0.1003 | -1.7761 | 0.0771 | 0.9110 | 1.0977 |
| BIG4*** | -8.9254 | 3.0717 | -0.1844 | -2.9057 | 0.0040 | 0.7221 | 1.3849 |
| ROA | 121.2050 | 130.7342 | 0.0681 | 0.9271 | 0.3549 | 0.5385 | 1.8569 |
| LEV*** | 84.2664 | 27.5519 | 0.1801 | 3.0585 | 0.0025 | 0.8383 | 1.1928 |
| Number of observations | 232 | | | | | | |
| F-statistics | 13.5597 | | | | | | |
| Prob. > F | 0.0000 | | | | | | |
| $R^2$ | 0.3547 | | | | | | |
| Adjusted $R^2$ | 0.3286 | | | | | | |

**Note :** *significant at the 0.1 level, **0.05 level and ***0.01 level. All variables are defined in Table II.

Company attributes, such as company size has significant positive association to audit delay. Hence, hypothesis 5 (company size) is accepted. A larger bank would be more

complex and take more time to finish audit process and created delays. The result is consistent with McLelland and Giroux (2000), Aryati and Theresia (2005), Ahmad *et al*. (2005), Wang & Song (2006), Afify (2009), Banimahd *et al*. (2012), Pourali *et al*. (2013).

In the other hand, auditor opinion and audit firm quality have significant negative association on audit delay, which means Indonesian listed commercial banks' unqualified audit reports were audited in a timely manner and the higher reputation of audit firm will increase banks' financial reporting quality. Hence, hypothesis 6 and hypothesis 7 are accepted. The result of auditor opinion is consistent with Jaggi and Tsui (1999), Wenny (2007), Lee and Jahng (2008), CN and Ubaidillah (2008), Listiana and Susilo (2010), Turel (2010), and Shukeri and Islam (2012). In addition, audit firm quality finding in this study is consistent with Lawrence and Glover (1998), Ahmed (2003), Leventis *et al*. (2005), Ansah and Leventis (2006), Lee and Jahng (2008), Nor *et al*. (2010), Ghanem and Hegazy (2011), McGee and Yuan (2012), Shukeri and Islam (2012).

However, profitability have a positive correlation on audit delay but does not show any significance. The result is consistent with CN and Ubaidillah (2008). Profitability measures the bank's ability to generate income, which is less likely significant related to financial reporting. In operational process, the more profitable a bank, the more complex its activity, so audit delay is more likely to happen. Thus, hypothesis 8 is rejected.

Finally, the finding does support hypothesis 9 (leverage). Leverage is an indicator of firm rentability. Thus, the higher leverage ratio in a bank which means more liabilities issued tend to have audit delay. The finding support the evidence from Lee *et al*. (2008), Wu *et al*. (2008), Ishak *et al*. (2010).

## Conclusion

### Summary

This study provides empirical evidence relating to audit delay of commercial banks listed in IDX from 2008 – 2015 through identifying the impact of audit committee effectiveness on audit delay. The analysis of the sample commercial banks listed in IDX has complied with the Indonesian financial reporting regulations and reported within 66 days. Financial reporting in Indonesian commercial banks ranging from the minimum of 11 days to the maximum of 139 days. The results indicated that audit committee size and audit committee meeting is negatively significant on audit delay. Meanwhile, control variables such as company size and leverage are positively significant to audit delay. The other control variables that have significant negative association on audit delay are auditor opinion and audit firm quality.

### Limitation of the study

There are some limitations in this study. First, there is the possibility that the audit committee mechanism stated in annual reports does not reflect the actual practices. Second, there could be more variables that indicated audit committee effectiveness such as audit committee tenure, audit committee gender, audit committee duty and audit committee voluntary disclosure. Third, limited data such as annual reports and financial statements published.

### Suggestions for further research

Further research is suggested to identify more audit committee effectiveness variables used to determine its impact on audit delay. Thus, this study could contribute vastly to Indonesia commercial banks, regulators, capital market and all stakeholders in reducing audit delay and concerns to timeliness of financial reporting.

## References

Afify, H. A. E. (2009). Determinants of audit report lag: Does implementing corporate governance have any impact? Empirical evidence from Egypt. *Journal of applied accounting research, 10*(1), 56-86.

Ahmad, A. C., & Abidin, S. (2008). Audit delay of listed companies: A case of Malaysia. *International business research*, *1*(4), 32-39.

Ahmad, N., & Aziz A. A. (2005). Timeliness of local authorities' financial report. *Journal of financial reporting and accounting*, *3*(1), 111-127.

Ahmed, K. (2003). The timeliness of corporate reporting: A comparative study of South Asia. *Advances in international accounting*, *16*, 17-43.

Al-Ajmi, J. (2008). Audit and reporting delays: Evidence from emerging market. *Advances in Accounting*, *24*(1), 217-226.

Al-Ghanem & Hegazy, M. (2011). An empirical analysis of audit delays and the timeliness of corporate financial reporting in Kuwait. *Eurasian business review*, 1, 73-90.

Arens, A., Elder, R. J., & Beasley, M. S. (2010). *Auditing and Asurance Services*. United States of America : Prentice Hall.

Aryati, T., & Theresia, M. (2005). Determinants on audit delay and timeliness. *Media riset akuntansi, auditing dan informasi*, *5*(3), 271-287.

Ashton, R. H., Graul, P. R., & Newton, J. D. (1989). Audit delay and the timeliness of corporate reporting. *Contemporary accounting research, 5*(2), 657-673.

Asthon, R. H., Paul, Willingham, J.J., & Elliot, R.K. (1987). An empirical analysis of audit delay. *Journal of accounting research*, *25*(2), 275-292.

Aubert, F. (2009). Determinants of corporate financial reporting lag: The French empirical evidence. *Journal of accounting and taxation, 1*(3), 053-060.

Bamber, E. M., Bamber, L. S., & Schoderbek, M. P. (1993). Audit structure and other determinants of audit reporting: An empirical analysis. *Auditing: A journal of practice and theory, 12*(1), 1.

Banimahd, B., Moradzadehfard, M., & Zeynali, M. (2012). Audit report lag and auditor change: Evidence from Iran. *Journal of basic applied science research, 2*(12), 12278-12282.

Beams, F. A., Anthony, J. H., Bettinghaus, B., & Smith., K. A. (2012). *Advanced Accounting Eleventh Edition*. United States of America: Pearson Education Inc.

Bean, D. F., & Bernardi, R. A. (2003). Improvements in audit report lag and reporting timeliness: A non-event for technology advances. *Journal of business and economics research, 1*(2), 1-12.

Belkaoui, A. R. (2004). *Accounting theory*. United Kingdom: Cengage learning EMEA.

Bonson-Ponte, E., Escobar-Rodriguez, T., & Borrero-Dominguez, C. (2008). Empirical analysis of delays in the signing of audit reports in Spain. *International journal of auditing, 12*(2), 129-140.

Carslaw, C. A. P. N., & Kaplan, S. E. (1991). An examination of audit delay: Further evidence from New Zealand. *Accounting and business research*, *22*(85), 21-32.

C.N, M.G. Venny. (2008). Audit delay in manufacturing firms case study of BAPEPAM in year 2005. *Akuntabilitas : Jurnal penelitian dan pengembangan akuntansi, 2*(2), 126-139.

Davies, B., & Whittred, G. P. (1980). The association between selected corporate attributes and timeliness in corporate reporting: Further analysis. *Abacus, 16*(1), 48-60.

Ettredge, M. L., Li, C., & Sun, L. (2006). The impact of SOX Section 404 internal control quality assessment on audit delay in the SOX era. *Auditing: A journal of practice and theory*, 25(1), 1-23.

Fagdemi, T. O., & Uadiale, O. M. (2011). An appraisal of the determinants of timeliness of audit report in Nigeria: Evidence from selected quoted companies. *The 2011 new orleans international academic conference*.

Febrianty (2011). Determinant on audit delay in public listed trading companies in Indonesia 2007-2009. *Jurnal ekonomi dan informasi akuntansi*, *1*(3).

Ghozali, I. (2002). *Aplikasi analisis multivariate dengan Program SPSS, edisi kedua*. Semarang: Badan Penerbit Universitas Diponegoro.

Givoly, D., & Palmon, D. (1982). Timeliness of annual earnings announcements: Some empirical evidence. *The Accounting Review, 57*(3), 486-508.

Habib, A., & Bhuiyan, M. B. U. (2011). Audit firm industry specialization and audit report lag. *Journal of international accounting, auditing and taxation*, *20*, 32-44.

Hair, J.F., Black, B., Babin, B., Anderson, R. E., & Tatham, R. L. (2001). *Multivariate data analysis fifth edition*. New Jersey: Prentice Hall.

Hashim, U, J., & Rahman, R. (2011). Audit report lag and the effectiveness of audit committee among Malaysian Listed Companies. *International bulletin of business administration*, *10*.

Ika, S. R., & Ghazali, N. A. M. (2012). Audit committee effectiveness and timeliness of reporting: Indonesia evidence. *Managerial auditing journal*, *27*(4), 403-424.

Ishak, I., Sidek, A. S. M., Sidek & Rashid, A. A. (2010). The effect of company ownership on the timeliness evidence from Malaysia. *Unitar E-Journal, 6*(2), 26-35.

Ismail, H., Mustapha, M., & Ming, C. O. (2012). Timeliness of audited financial reports of Malaysian Listed Companies. *International journal of business and social science*, *3*(22), 242-247.

Iyoha, F.O. (2012). Company attributes and the timeliness of financial reporting in Nigeria. *Business intelligence journal*, *5*(1), 41-49.

Jaggi, B., & Tsui, J. (1999). Determinants of audit report lag: Further evidence from Hong Kong. *Accounting and business research*, *30*(1), 17-28.

Khasharmeh, H. A., & Aljifri, K. (2010). The timeliness of annual reports in Bahrain and The United Arab Emirates: An empirical comparative study. *International journal of business and finance research*, *4*(1), 51-71.

Kieso, D. E., Weygandt, J. J., & Warfield, T. D. (2011). *Intermediate accounting IFRS edition*. Asia: John Wiley & Sons Pte Ltd.

Knechel, W. R., & Payne, J. L. (2001). Research notes. Additional evidence on audit report lag. *Auditing: A journal of practice and theory*, *20*(1), 137-146.

Lawrence, J. E., & Glover, H. D. (1998). The effect of audit firm mergers on audit delay. *Journal of managerial issues, 10*(2), 151-164.

Lee, H., & Jahng, G. (2008). Determinants of audit report lag: Evidence from Korea – an examination of auditor-related factors. *Journal of applied business research, 24*(2), 27-44.

Lee, H., Mande, V., & Son, M. (2008). A comparison of reporting lags of multinational and domestic firms. *Journal of international financial management and accounting*, *19*(1), 28-56.

Leventis, S., Weetman, P., & Caramanis, C. (2005). Determinants of audit report lag: some evidence from the Athens Stock Exchange. *International journal of auditing*, *9*(1), 45-48.

Listiana, L., & Susilo, T. P. (2012). Determinant on audit delay. *Media riset akuntansi*, *2*(1), 48-59.

McClave, T. J., & Sincich T. (2003). *Statistics, 9th edition*. Pearson Education International.

McGee, R. W., & Yuan, X. (2012). Corporate governance and the timeliness of financial reporting: a comparative study of People's Republic of China. *Journal of asian business studies*, 6(1), 5-16.

McLelland, A. J., & Giroux, Gary (2000). An empirical analysis of auditor report timing by large municipalities. *Journal of accounting and public policy 19*, 263-281.

Ng, P. P. H., & Tai, B. Y. K. (1994). An empirical examination of the determinants of audit delay in Hong Kong. *British Accounting Review, 26*(1), 43-59.

Nor, M. N. M., Shafie, R., & Hussin, W. N. W. (2010). Corporate governance and audit report lag. *Asian academy of management journal of accounting and finance*, *6*(2), 57-84.

Oladipupo, A. O. (2011). Impact of corporate international linkage on the incidence of audit delay in Nigeria. *JORIND 9*(1), 231-236.

Owusu-Ansah, S. (2000). Timeliness of corporate financial reporting in emerging capital markets: empirical evidence from the Zimbabwe Stock Exchange. *Accounting and business research*, *30*(3), 241-254.

Owusu-Ansah, S., & Leventis, S. (2006). Timeliness of corporate annual financial reporting in Greece, *European accounting review*, *15*(2), 273-287.

Pourali, M. R., Jozi, M., Rostami, K. H., Taherpour, G. R., & Niazi, F. (2013). Investigation of effective factors in audit delay: Evidence from Tehran Stock Exchange, *Research journal of applied sciences, engineering and technology, 5*(2), 405-410.

Reeve, M. J., Warren, C. S. & Duchac, J. E. (2009*). Principles of Accounting*. United States: South-Western Cengage Learning.

Schwartz, K. B., & Soo, S. B. (1996). The association between auditor changes and reporting lag. *Contemporary accounting research*, *13*(1), 353-370.

Shukeri, S. N., & Islam, M. A. (2012). The determinants of audit timeliness: evidence from Malaysia. *Journal of applied sciences research, 8*(7), 3314-3322.

Shulthoni, M., (2012). Determinan audit delay dan pengaruhnya terhadap reaksi investor. *Jurnal akuntansi dan ekonomi bisnis, 1*(1), 55-71.

Tauringana, V., Kyeyune, M. F., & Opio, P. J. (2009). Corporate governance, dual language reporting and the timeliness of annual reports on the Nairobi Stock Exchange, *Research in accounting in emerging economics*, *8*, 13-37.

Turel, Asli (2010). Timeliness of financial reporting in emerging capital markets: Evidence from Turkey. *Istanbul university journal of the school of business administration*, *39*(2), 227-240.

Wang, J., & Song, L. (2006). Timeliness of annual reports of chinese listed companies, *Journal of chinese economic and business studies*, *4*(3), 241-257.

Wenny, C. M. (2007). Variabel total lag laporan keuangan perusahaan manufaktur di BEJ. *Akuntabilitas*, *7*(1), 18-22.

Wu, C., Wu, C. & Liu, V. W. The release timing of annual reports and board characteristics. *International journal of business and finance research*, *2*(1), 103-11.

**Contact email:** triana.tan14@gmail.com

iafor

# *Logistics Cost Structure Analysis for the Development of Supply Chain Strategies on Aquaculture Business*

Adi Djoko Guritno, Gadjah Mada University, Indonesia

The Asian Business & Management Conference 2016
Official Conference Proceedings

**Abstract**
The cost of logistics is one of the most important factor in the aquaculture business. Each tier in the supply chain will affect the risk and profit margins earned by each business actors. The study was conducted to identify supply chain's tier in aquaculture business, analyzing the logistics' cost structure, calculating profit margins, and develop supply chain strategies. The study uses two stages of sampling, there are purposive sampling and snowball sampling. In-depth interviews were conducted to 79 respondents divided into two regions, namely Sleman region (distributed into 7 sub-regions), and Klaten region (3 sub-regions). The results showed aquaculture business which consists of 6 tiers: fish larvae producer, spreader, enlarger, wholesaler (collectors), retailer and consumer. The cost of logistics is the dominant activity procurement costs have on average 80.53% of the total cost. The profit margins for producers of fish larvae, spreaders, enlarger, and wholesalers vary from 0.4% - 57.9%. Supply chain strategy recommended for tier fish larvae producer is vertical integration, the tier spreader is recommended to apply vertical integration with the concept of few suppliers, the proposed strategy for tier enlarger is push-based strategy, and tier wholesaler is a pull-based strategy.

Keywords: Aquaculture, business, supply chain, profit margin, strategy

## Introduction

During year 2010 - 2014, aquaculture production showed a positive trend with an increasing reach 23.74% per year on average. The positive performance for the value of aquaculture production also increases in the same period with an average increase of 16.12% per year. Meanwhile, the increasing in the production of aquaculture in freshwater which is accounted for 11% every year shows the potential growth for the community to develop the cultivation of freshwater fish. Based on the facts, more than 70% of freshwater fish production is absorbed by the domestic market in which Java Island is accounted for the larger due to the population density. Demand from Java Island will continue to grow because per capita consumption of fish in Java Island is still below per capita consumption outside Java Island. In addition, distribution of aquaculture product is different from the distribution of marine fisheries because aquaculture product requires special material handling to ensure that the fish is still alive during the delivery. There are several stakeholders involved in the supply chain of aquaculture business and each of them have different problem and challenge related to the operational and logistics activity in which contribute to the different risk faced by each tier. These different risks may cause the different profit margin in each tier. This study aims to analyze the cost structure along the supply chain, use value chain analysis approach toward the risk in each tier, and also develop supply chain strategy.

## Methods

The study was conducted in the area around Yogyakarta province with the type of fish including tilapia, pomfret and catfish. The study used two stages of sampling which were purposive sampling and snowball sampling. Data collection was conducted through in-depth interview to each respondent. The respondents consist of 79 stakeholders divided into two regions, namely Sleman region which is distributed into 7 sub-regions including Ngemplak, Moyudan, Mlati, Berbah, Depok, Seyegan, and Kalasan, and Klaten region with 3 sub-regions including Tulung, Polanharjo and Karanganom. In-depth interviews were conducted to identify factors affecting cost structure and to identify logistics cost structure in each tier. Thus, the logistics cost analysis was then used to determine the profit margins earned by each tier. The results were then analyzed further using strategies in supply chain management.

## Result and Discussion

### The Supply Chain of Aquaculture for Freshwater Fish

The main stakeholders in supply chain of aquaculture consist of 6 tiers including fish larvae producer, spreader, enlarger, wholesaler (collectors), retailer and consumer. Figure 1 and 2 shows the supply chain of aquaculture in Sleman region and Klaten region.

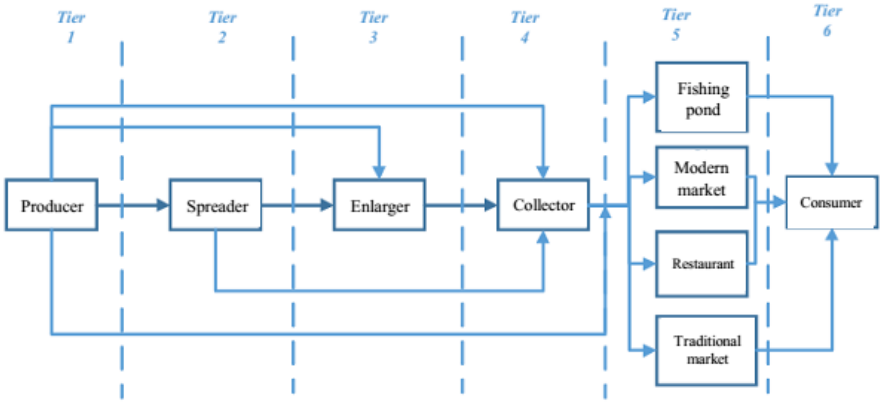



Figure 1 : The supply chain of aquaculture in Sleman region

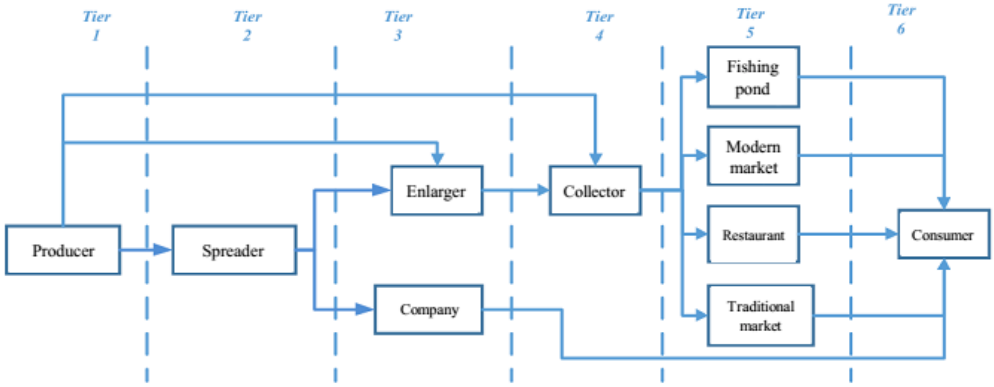



Figure 2 : The supply chain of aquaculture in Klaten region

Fish larvae producer has a role to produce good fish seed either in the form of larvae or egg. Fish seed is produced from fish spawning process in which requires special skills to pay attention on each parameter such as water temperature, fish condition, spawning time, and type of brood stock. Furthermore, spreader will continue to grow the larvae from spawning process. Based on the in-depth interview, the spreading activity is more often conducted in Sleman region than Klaten region. The third tier is enlarger who has a role to enlarge the fish into the size of consumption. The supply chain of aquaculture in both regions are slightly different because in the enlarger stage, there is one international company in Klaten who able to absorb almost the entire production of tilapia. On the other hand, the enlarger tier in Klaten is more superior because there are many enlargers in Klaten who focus and specialize themselves in fish enlargement process. Furthermore, wholesaler or collector buy the fish with ready-to-consume size and sell it to the retailer including fishing pond, modern market, restaurant and traditional market.

## Analysis of Logistics Cost

Calculation of logistics costs in every activity can be used to determine which tier has a dominant proportion of cost against activity (Zeng & Rossetti, 2003; Pishvaee *et al.,* 2009; Guritno, *et al*., 2015). The logistics activity along the corn supply chain is divided into six activities including procurement, material handling, maintenance, transportation and communication. The analysis resulted in the proportion of logistics costs, component costs the most influence on their respective logistics activities and what activities can be controlled at every tier (Gumus & Guneri, 2007; Lailossa,

2005). Analysis of logistics cost for each type of fish should be calculated separately because each type of fish requires different kind of treatment. This study divide the analysis of logistics cost into five calculations which are logistics cost structure for tilapia in Sleman, catfish in Sleman, pomfret in Sleman, tilapia in Klaten and catfish in Klaten. All of those logistics cost analysis shows that procurement activity is accounted for the highest portion in the total logistics cost with the portion of 80.74%, 78.88%, 78.02%, 89.87% and 87.08% respectively. Procurement activity as the initial activity in this aquaculture business is very important because it will determine the successful of the rest activities in this business. Good initial activity leads to the good result and yield. In addition, the second highest cost is material handling with the portion of 13.03%, 12.90%, 15.51%, 6.90% and 4.35% respectively.

Table 1 : The average cost of each tier in the supply chain

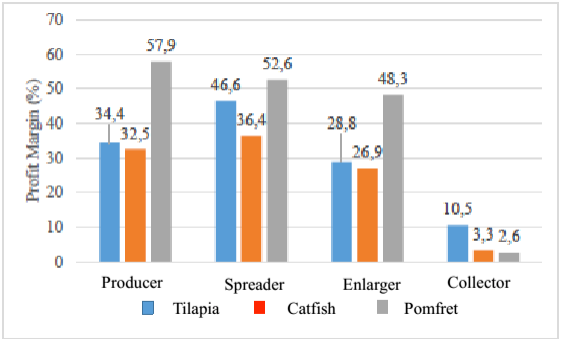
| Tier | | Average cost (Rp) | | | | |
|---|---|---|---|---|---|---|
| | | Sleman | | | Klaten | |
| | | Tilapia | Catfish | Pomfret | Tilapia | Catfish |
| 1 | Fish larvae producer | 1,689,840 | 1,586,231 | 814,293 | 2,108,287 | 1,579,705 |
| 2 | Spreader | 3,125,257 | 2,1752,608 | 1,904,916 | 3,319,142 | 3,074,659 |
| 3 | Enlarger | 9,260,889 | 8,255,578 | 2,307,718 | 34,734,465 | 8,848,981 |
| 4 | Wholesaler/ collector | 725,350 | 666,684 | 552,922 | 824,034 | 637,591 |

Note: 1 US$ = Rp 13,000.00

Table 1 shows the significant difference between the average cost of tilapia in Sleman and tilapia in Klaten. In the enlarger stage, the average cost in Klaten is almost four times than that of Sleman. This is because in Klaten has a typical pool with a heavy stocking rate that is much more than that of Sleman. The density of stocking numbers that can reach 150 fishes/m² at each pool may cause the increasing of volume of fishes being handled. Thus, it increases the feed cost.

## Profit Margin Analysis

From the calculation of profit margin, different profit margin earned by each tier is occurred as shown in Figure 3 and 4. For aquaculture of tilapia and catfish, spreader earn for the highest profit margin among all tiers in both Sleman and Klaten, while wholesaler or collector earn for the smallest. On the other hand, fish larvae producer account for the second highest in Sleman, while enlarger is the second largest in Klaten.



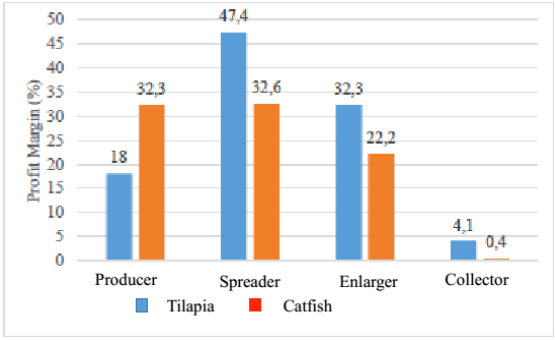




Figure 3 : Profit Margin of Each Tier in Sleman (left); Figure 4 : Profit Margin of Each Tier in Sleman (right)

## Supply Chain Strategy for Aquaculture Business

The fish larvae producer should increase the quality of spawning process and encourage the use of feed alternative with the similar quality but with lower cost. In the long-term business, they should do vertical integration which can be potential in the future. As the second tier, spreader should enhance the ability to choose the good fish seed as well as choose the supplier who able to provide good quality of fish seed. So that, they only being supplied by few suppliers to maintain the quality. On the other hand, vertical integration with the fish larvae producer also may lead to the high availability of raw material. Next, enlarger should develop feed alternative as a side component of main feed with the lower cost and do the push-based strategy. They also should buy in the large quantity to the big organization or supplier in order to get lower price or discount. In addition, employing pull-based strategy, finding many suppliers to maintain the inventory and enhancing sales volume by increasing the number of store are the strategies that should be conducted by the wholesalers.

## Conclusion

The results of the calculation of logistics cost structure shows that procurement and material handling are accounted for the highest portion. Therefore, the producer, spreader and enlarger should optimize their resources and improve the volume of yield. The fish larvae producer and spreader should do vertical integration as their supply chain strategy. For the supplier strategy, spreader should choose few suppliers to maintain the quality. Moreover, push based strategy should be chosen by enlarger, while collector should choose pull-based strategy.

## References

Gumus, T.,& Guneri, F. (2007). Multi-Echelon Inventory Management in Supply Chain with Uncertain Demand and Lead Time: Literature Review from An Operational Research Perspective. *Engineering Manufacture, Proc. Imech E*, 221, 1553 – 1570.

Guritno, A.D., Fujianti, R., & Kusumasari, D. (2015). Assessent of the Supply Chain Factors and Classification of Inventory Management in Suppliers' Level of Fresh Vegetables. *Agriculture and Agricultural Sciences Procedia, 3, 51-55.*

Lailossa, G.W. (2015). The New Paradigm of Cold Chain Management Systems and It's Logistics on Tuna Fishery Sector in Indonesia. *AACL Bioflux,* 8, 381 – 389.

Pishvaee, M., S., Basiri,H., & Sheikh, M., S. (2009). *Supply Chain and Logistics in National, International and Governmental Environment,*. Berlin: Springer-Verlag

Zeng, A.,Z. & Rossetti, C. (2003). Developing a Framework for Evaluating the Logistics Costs in Global Sourcing Processes. *International Journal of Physical Distribution and Logistics Management*, 33, 786 – 803.

# *Strategy Development of Importation Perishable Products Using Business Process Analysis at Major Sea Port of Indonesia*

Megita Ryanjani Tanuputri, Kasetsart University, Thailand
Ravipim Chaveesuk, Kasetsart University, Thailand
Adi Djoko Guritno, Gadjah Mada University, Indonesia

The Asian Business & Management Conference 2016
Official Conference Proceedings

**Abstract**
The collaboration among all stakeholders within the supply chain is necessary for the effectiveness of the business. This study explores the relationship among all stakeholders in the importation of perishable products at the major sea ports of Indonesia: Tanjung Priok port and Tanjung Perak port. Convenience sampling through in-depth interview was employed to analyze the current issues in each stakeholder including importers, Quarantine unit, Customs, and freight forwarders (FFs). Moreover, business process analysis through Integration Definition for Function Modeling (IDEF0) was used to identify the relationship among all stakeholders. T-test statistics was also conducted to test the difference between customs clearance time in both sea ports. Based on in-depth interview, the role of FFs is necessary to encourage the importation process. Some issues in the pre-customs and customs clearance were identified in this study. The result showed that the mean time for customs clearance in Tanjung Priok port (3.87 days) is slightly longer than that of Tanjung Perak port (3.11 days). Thereby, Indonesian government should improve the infrastructure and strengthening the Indonesian National Single Window (INSW) as the strategy to improve National logistics performance. The development of collaboration among private stakeholders is the strategy that may enhance the effectiveness of the business.

Keywords: Import, Business Process Analysis, Perishable Products, IDEF0, Strategy

## Introduction

Currently, Indonesia is one of the countries with high logistics cost at around 23.6% of GDP (Jakarta Post, 2014). In terms of Logistics Performance Index (LPI), Indonesia ranks 63rd in the world with decreasing scores in timeliness, logistics competence, infrastructure and customs (World Bank, 2016). Moreover, Indonesia is world's 4th most populous country with around 250 million people which leads to the high food consumption (World Bank, 2013). However, an unstable local production is often occured and may cause lack of local products and food insecurity. Those lack of local products conditions trigger food import activity and attract foreign investors to expand their business in Indonesia.

In addition, high dwelling time and unofficial costs at the sea ports are the main issues in the importation process. It leads to the inefficient and costly logistics in which may impact to the competitiveness of Indonesia in National logistics performance. Most international containers throughput are concentrated in Java Island where both Tanjung Priok port, Jakarta and Tanjung Perak port, Surabaya, the two major sea ports in Indonesia are located. The Tanjung Priok port accounts for approximately 63.8% of the international container volume throughput throughout Java Island (The Organization for Economic Co-operation and Development, 2012). Integrated supply chain is needed to build collaboration among all stakeholders within the supply chain, while integrated logistics serves to link and synchronize overall supply chain as a continuous process and it is an essential requirement for an effective supply chain connectivity (Bowersox *et al*., 2013). This study focused on the importation process of perishable products at two Indonesian major sea ports by exploring the relationship and collaboration among all major stakeholders involved. Our objectives were to analyze current business process and to identify relationships and issues faced by each stakeholder in this importation process. Recommendation can thus be developed to improve the effectiveness of the process.

## Methodology

In this study, convenience sampling was used as a sampling methodology. We employed in-depth interviews with the stakeholder including importers, freight forwarders (FFs) and port authority to analyze the current process issues. Then, we developed the business process based on Integration Definition for Function Modelling (IDEF0). IDEF0 consists of inputs, controls, outputs, and mechanisms, which can be used to model the relationship between different activities (Yong-peng & Huan-zhou, 2010). The previous study analyzed the business process of raw milk collection center in Thailand by using IDEF0 level 0 to show the relationship of stakeholders in the supply chain, while activity in the raw-milk collection center is more detail shown by IDEF0 level 1 (Ongkunaruk, 2015). In order to evaluate the customs clearance in the port, we identified and compared the customs clearance lead time in Tanjung Priok port and Tanjung Perak port by using independent t-test. Next, we proposed recommendations to improve the importation process of food products in major ports in Indonesia.

## Results and discussion

Stakeholders under this study included importers, Quarantine unit, Customs and freight forwarders. The business process (Figure 1) starts from an importer who owns import license and places an order to the overseas traders. Quarantine and Customs are two government agencies whose roles will dictate the clearance lead time at the port. In the importation process, Quarantine has an authority to check the health feasibility of each product arriving at the port by checking through the documents and/or laboratory tests. Customs has a duty for checking the list of product in every document that has to be compatible with the product being received at the port in terms of product's type, product's specification, product's quota, and government regulation. A freight forwarder who acquires authority from the importer handles all customs issues, the National Agency of Drug and Food Control (BPOM) issues and delivery task. Then, an importer or FF is allowed to discharge the container out of the port after receiving a letter of approval from Customs known SPPB.

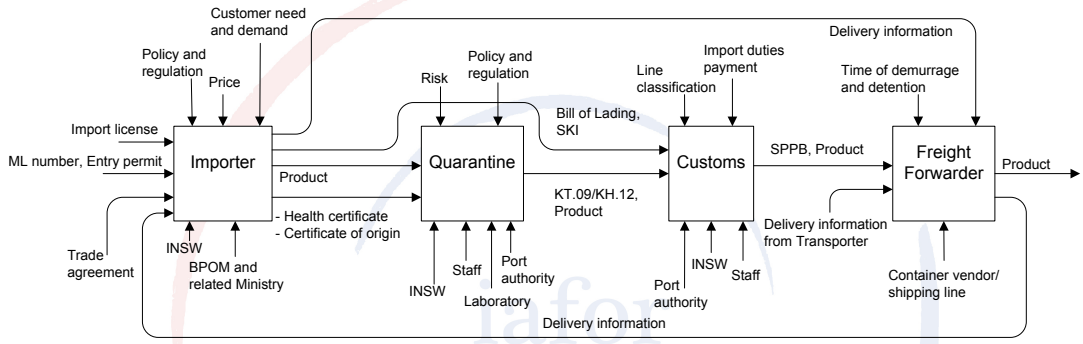



Figure 1 : The business process at Indonesian major ports (IDEF0 level 0)

Pre-customs clearance includes all related activities before the product arrive at the port i.e. issuing imported product registration number known as ML number, and importation approval known as SKI. In this study, customs clearance includes all activities in Quarantine unit and Customs in order to get the SPPB, while post-customs clearance is the activities carried out after the importer receives the SPPB until the discharge of the products out of the port.

## The business process of importer

The work of an importer consists of preparing initial document, placing the order to an overseas supplier or trader, and arranging the shipment of the product as shown in Figure 2. The importer should prepare several certified documents and product samples to request an import license, entry permit, and ML number. According to Indonesia policy, each SKU of an imported food product in retail packaging must have the ML number which is issued by BPOM. Import license can be obtained from Ministry of Trade, while entry permit may be issued by the related ministry depending on the type of the products. A particular type of food products may require different types of importation documents. Then, for detail information of required document, the importer can check it through Indonesian National Single Window (INSW) by using HS code as an input.

Typically, most importers are located in Jakarta, while only large importer producer who own factories are located in Surabaya. This research reveals that a number of importers in Jakarta is larger than that in Surabaya because greater Jakarta (Jakarta, Bogor, Depok, Tangerang and Bekasi) have many large factories as they are the center of Indonesian economic activities. Generally from in-depth interview, Surabaya is the main distribution branch of the general importer with warehouse

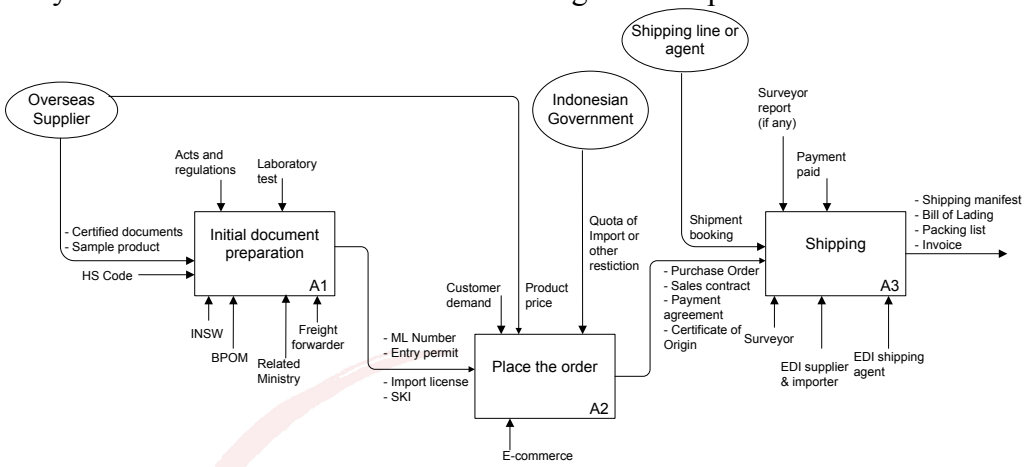



Figure 2 : The business process of importer (IDEF0 level 1)

facilities. In order to get the ML number, the importer should give adequate samples of product to BPOM for a laboratory tests. According to the interview, it may take up from 14 days to 2 years because of inadequate samples received by the importer and BPOM, other than administrative reasons i.e. incompleteness of required documents. Importation of food product also has to obtain the SKI from the Head of BPOM. SKI is only valid for one time of importation or one time of shipment and should be proposed before the product arrives at the port. Currently, the online system for acquiring those importation documents have been installed and employed but it is not being integrated yet with INSW. SKI has been integrated with INSW but import license and ML number are not being integrated yet. INSW presently integrate communication and sharing information among importers, BPOM, Quarantine and Customs. Once the importers get all initial documents, they can place the order by considering customers or market demand and price. The import quota or other restrictions from the government of Indonesia help to control the imported product movement within Indonesia and domestic commodity price. Since the importer orders the product through the traders and not directly from the manufacturer, it is difficult to communicate the market need and demand directly to the manufacturer.

Before shipping, the importer should book the space for the shipment with the shipping line. Shipment booking and product volume being shipped should be taken into importer's consideration to reduce shipping cost and time because it will dictate whether Full Container Load (FCL) or Less than Container Load (LCL) is required. The payment agreement between the importer and the overseas trader help to determine the shipping activity. Bill of Lading (BoL) is a contract between a shipper and a carrier that list the terms for moving freight between specified points. An original document of BoL is required once the product arrives at the port but it can be issued after the ship leaves the port of origin. However, there is an issue in short distance shipment, for example from Singapore to Jakarta, where the original

document sent by postal mail tends to arrive later than the product, thus leading to customs clearance delay in the port.

**The business process of freight forwarder**

The previous study observed that overseas companies mostly use third parties, such as FF and 3PL, to accelerate and manage their logistics activities, especially with customs clearance and quarantine at the port (Pujawan & Mahendrawathi, 2010). Some of FFs in Jakarta may have import license and act as the importer for all customs and BPOM issues. The FFs in Jakarta and Surabaya are companies with large to medium size. In case of Global FFs, the head office of Global FFs is located in Jakarta and they have office branches in Surabaya.

Most imported food-based product should deal with Quarantine unit before discharging the product out of the port. A diagram built based on the interview results (Figure 3) shows that the main documents required for Quarantine are ML number, certificate of origin, health certificate, certificate of quality, and letter of recommendation known as SRP for a particular animal-based product issued by the Ministry of Agriculture. Risk classification, international regulation, and Indonesia's regulation control the activities in the Quarantine unit.

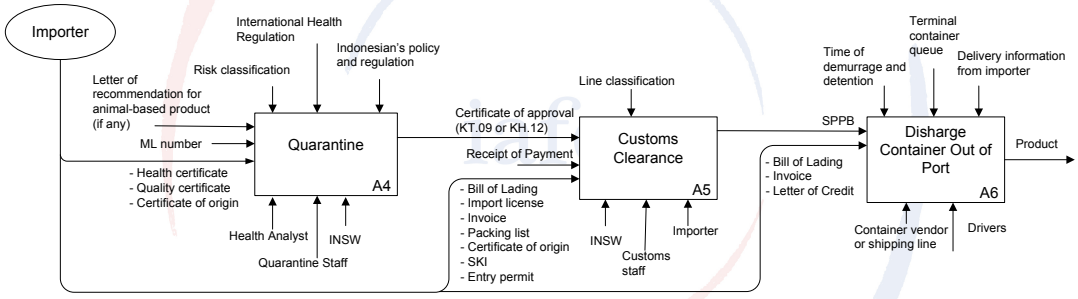



Figure 3 : The business process of freight forwarder (IDEF0 level 1)

The Quarantine unit classifies the products based on the product risk as low, medium and high risk. Low risks products include processed foods which require only document checking and are released within 1 day once the documents are completely submitted. Medium risk products are primary processing products that require detailed review of all documents as well as physical checking, when deemed necessary. It may take 2-4 days for medium risk products to pass the Quarantine process, which depends on testing method being implemented and health issue being observed. High risk products including vegetable, fruit, live animal and no history goods (new imported goods) require deeper inspection on both documents and laboratory and it may take 4-5 days on average or 21 days to 6 months in some cases depending on the food safety issue of interest. Once Quarantine unit reveals that the product is safe, the Quarantine unit issues the certificate of approval, either KT.09 for plant-based product or KH.12 for animal-based product, through INSW.

Currently, INSW as a real-time tool for Customs plays an important role for checking documents for customs clearance and feedback given by all stakeholders involved. Customs require a number of general documents for customs clearance such as Bill of Lading, import license, SKI, entry permit, receipt of payment and the KT.09 or KH.12 from the Quarantine unit that all of them can be tracked and seen from INSW. To

control the imported product, Customs will classify products into green, yellow, and red lines based on product risk, import history, importer's profile, commodity's profile, and country of origin. The green line is for products with good import history, while the yellow line is for general products and the red line is for new items, hazardous commodities or goods with bad import history. Occasionally, Customs randomly put a product in the red line to physically check it and crosscheck with documents accompanying the product. Customs has the authority to determine channeling and clearance lead time for the product and correct the import duty for a particular case. Customs only checks the documents for both the green and yellow lines, while products categorized in the red line require both document and laboratory testing. Unfortunately, there is currently an overlapped activity between the Customs and the Quarantine unit when the Quarantine requests a stringent check and it ends up with container being opened twice which is inefficient and takes longer time. Once all the checking procedure is completed, Customs releases SPPB through INSW. An in-depth interview pinpoints that INSW is a Custom's tool to determine and accelerate customs clearance activity in the port, which reduces transaction time and improves transparency. However the INSW is not fully optimized and it is need to be integrated with related ministries i.e. ministry of trade, ministry of agriculture, etc.

As FF is the representative of importer, they discharge the container out of the port by showing SPPB and certificate approval from Quarantine. As shown in Figure 3, demurrage time, long container queue at the terminal, and delivery schedule from the importer are issues that affect flow of product release. Since the container used to carry the imported product is rented from the shipping line, consequently the importer or consignee has to pay a penalty fee when the cargo is not moved off a wharf before the free time allowance ends. The penalty in respect of exceeding free time allowed for loading or discharging the shipment is known as demurrage. The port delay also leads to higher container stacking tariff since the container is placed for longer time at the container yard. Hence, information sharing between the importer and the FF is a must to minimize the cost. The free time of demurrage for a special container such as a refer container is 3 days minimum while for a dry container, it is 5 days minimum. The time of demurrage also depends on the shipping line policy. The long document processing time and lack of coordination and system post a problem in the pre-customs clearance at the port.

Frequently, importers may delay to discharge the container out of the port because they do not have available space in their warehouse. This situation leads to an increase in post-customs clearance time, which is related to the dwelling time. In response to this issue, both Tanjung Priok and Tanjung Perak ports have been applying penalty fee for imported cargo containers that are not discharged out from the container yard within a particular period of time after SPPB is released. This penalty fee is applied to control the flow of container at ports, even though many importers oppose to it. In Indonesia, the delivery task from port to an appointed place is a FF's duty. Some large FFs in Jakarta and Surabaya act as minor transporter to support their delivery task and achieve an economy of scale, while medium and small FFs outsource transportation to the third party logistics i.e. transporters. Large FFs that mostly handle food-based product employ cold chain system, while smaller FFs and general FFs that mostly handle general cargo do not provide cold chain system and may outsource to other transporters.

**Comparison of customs clearance time in Tanjung Priok Port, Jakarta and Tanjung Perak Port, Surabaya**

T-test was carried out to test the difference between customs clearance time in Jakarta and Surabaya based on small sample size. Customs clearance at ports consists of two activities, which are Quarantine and Customs checking. Normal distribution assumption for the data from both samples was proven. Homogeneity test of variance indicated that the variance for both customs clearance time in Jakarta and Surabaya are equal ($p>0.05$). The results of t-test statistics for customs clearance time in both ports are reliable and shown in Table 1.

Table 1. T-test statistics for customs clearance lead time between two cities

| | Tanjung Priok port | | | Tanjung Perak port | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| Customs Clearance (day) | 3.87[a] | 2.17 | 6 | 3.11[a] | 1.33 | 5 |

Mean values with similar superscript letter are not significantly different($p>0.05$)

The results indicate that the customs clearance mean time between Tanjung Priok port and Tanjung Perak port is not significantly different. However, customs clearance time in Tanjung Priok port (almost 4 days) is slightly longer than that of Tanjung Perak port. In addition, the lead time in Tanjung Priok port fluctuates higher than that of Tanjung Perak port. This fluctuation is due to the traffic and throughput at Tanjung Priok port is larger, whereas the facilities are inadequate and imbalance. Since lead time of customs clearance is crucial and it is an indicator of logistics performance of the country, improvement must be made soon.

**Supply Chain Strategy**

Long document processing time and lack of coordination among stakeholders post problems in pre-customs clearance. Information sharing on delivery task between importers and freight forwarders is critical and it can be more complex when the FFs use the transporter. Lack of coordination may lead to delay in delivery task and cause economic loss through penalty fee for overtime storage of containers. Moreover, traffic condition at ports can limit delivery activities, which eventually affect logistics cost. Therefore, communication and information sharing among all major stakeholders is necessary to enhance the effectiveness of the importation process at ports. Importer should collaborate with the manufacturer to reduce repetitive work in pre-customs clearance. For the government, development of better infrastructure of the port and road and improvement of the integration of INSW with related ministries urgently need to be performed.

## Conclusion

There are two main private stakeholders and two government agencies involved including importers, freight forwarders, Quarantine Unit and Customs in the importation process of perishable products in Indonesia. Currently, INSW system is installed to enhance collaboration and integration among stakeholders but it is not functioning optimally yet. There are still several issues in importation process which lead to the inefficient activity. Therefore, all stakeholders should enhance their collaboration, coordination and sharing information in order to reduce misleading and redudancy works. For long term strategy, government should encourage better infrastructure in the port and road.

## References

Bowersox, D. J., Closs, D. J., Cooper, M. B., & Bowersox, J. C. (2013). *Supply chain logistics management* (4th ed.). Singapore: Mc-Graw Hill.

Jakarta Post. (2014). *High logistics cost still harming RI competitiveness*. Downloaded from: http://www.thejakartapost.com/news/2014/03/18/high-logistics-costs-still-harming-ri-competitiveness.html, November 14 2015.

Ongkunaruk, P. (2015). Business process analysis and improvement for a raw milk collection center in Thailand, *Agriculture and Agricultural Science Procedia 3*, 35-39.

Pujawan, I. N. & Mahendrawathi E.R. (2010). *Supply chain management*. Indonesia: Guna Widya Publishing.

The Organization for Economic Co-operation and Development. (2012). *Regulatory and competition issues in ports, rail and shipping in Indonesia*. OECD Reviews of Regulatory Reforms.

Yong-peng, Z. & Huai-zhou, Z. (2010). Modeling and simulation for equipment support system based on IDEF method, *2010 International Conference on Computer Application and System Modeling (ICCASM 2010)*. Taiyuan, China, paper.

World Bank. (2016). *Connecting to compete 2016 trade logistics in the global economy*. Washington: The World Bank.

iafor

The International Academic Forum (IAFOR)
Sakae 1-16-26-201
Naka Ward, Nagoya, Aichi
Japan 460-0008
ww.iafor.org