THE GROWTH OF THIRD PARTY LOGISTICS INDUSTRY: A LITERATURE STUDY AND RESEARCH AGENDA

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ABSTRACT

Logistics plays an important role in the supply chain process. An effective logistics management is required to become an efficient supply chain. Increasing trend in global manufacturing and global sourcing has made an efficient logistics become imperative especially in increasing the relation among entities. However, companies are forced to decrease cost continuously by focusing on their core activities. As a result, the trend of using third parties in performing logistics activities is increasing. The later causes significant growth in the third party logistics industry. The focus of this paper is on review of relevant literature in the growth of logistics industry and identifies growth contributed factors. Several research opportunities from the literature will also be discussed.

Keywords: Literature Review, Logistics, Logistics Industry, Third Party, Supply Chain

1. INTRODUCTION

The growing interest of firms on their core competences has driven firms to outsource some of their activities. 3PL become increasingly importance to the successful of the company. Initially, manufacturing company practised in-house activity logistics. Then, manufacturing does collaboration with 3PL firms, thus growing 3PL industries. The growth of the logistics industry is due to the demand of industrial manufacturing primarily large corporations. Manufacturing using 3PL services due to cost reduction, market segmentation and different services, so it can improve the performance of 3PL and generate profit (Panayides, 2004), and networking (mergers, acquisitions, and logistics alliances (Carbone, 2005). In addition, factors that affect the environment changes and the introduction of new technologies (Hum, 2000). The 3PL activities have spanned from simple business process to high customize activities, including the management of information technology, logistics, distributions, customer support activities, design and product development, assembly, etc. (Kroes & Ghosh 2010). Now days, 3PL can be a new source of competitive advantage of the companies (Sink & Langley, 1997).

Referring to 3PL industry growth stage identified that 3PL industry continues to experience growth where the big companies use the services of 3PL more than five companies. Capgemini (2013) survey reported increasing trend of revenue. However in the macro, it still less

explained the key to determine industry 3PL growth. Several previous studies have been conducted, however the factors were still limited and measured with indicator GDP and cargo turnover (Chu & Liu, 2008; Chen 2011; Cheng et al. 2010). Then, an evidence that logistics industry plays a very important role in the national economic development (Huang et al. 2013; Luan et al. 2012; Chen 2011; Qin 2010). In the future, 3PL industry can become competitive strategic with manufacturing and 3PL industry estimated as driver economy growth. It implies that it still needs a further study investigating determinants factors involved in the industry 3PL growth needed to determine scenario policy in the future, especially in Indonesia, that need to be revealed.

This paper will review relevant literature on how industry grow, and also identify growth contributed factors. This study is structured as follows. Part 2 will discuss logistics outsourcing in supply chain, followed by the growth of third party logistics industry on part 3. Part 4, The determinants factors of growth in the 3PL Industry from this literature review will be discussed.

2. LOGISTICS OUTSOURCING IN SUPPLY CHAIN

Logistics plays significant roles in the successful of company. It deals with movement, and storage of materials, parts and finished inventory and related information that flows across an organization and its partners (Christopher, 2005). Achieving effective and efficient logistics activities will obviously reduce cost and increase customer service level. Logistics has been a key position in the global economy and become a new source of competitive advantage. The increasing trend of globalization has raised the complexity of movement of goods, and finance as well as related information. The production facilities have been scattered around the world, this has increased the strategic role of logistics management. Lambert (2001) further defines that logistics management is part of supply chain management. This further emphasizes the strategic role of logistics management, it is not longer only deals with activities within a single company but also along a supply chain.

Increased complexity of logistics network requires effective and efficient management. Managing such logistics network obviously necessity substantial investment both in term of resources and facilities as well as human resources. In addition, the cost of operating such complex network is high. Severe competitions have forced companies to minimize cost while still maintaining to quality of products and services. Companies must keep focusing on core competencies and their value added activities. Outsourcing has been considered as one of strategies to minimize cost of logistics operations but maintain good quality of service. Outsourcing allows companies to focus on their core activities and let non core activities to be handled by others. Prahalad & Hamel (1990) states that outsourcing provides benefits in both directions, the organization and specialist suppliers. Following this, logistics activities in many companies are now performed by other companies. Logistics outsourcing, also called third party logistics (3PL), keeps evolving until today, it has been expanded not only in transportation and warehousing but also more varied activities from basic services to customize ones, including activities in management of information technology, distribution, customer support, design and product development, assembly, etc (Sink & Langley, 1997; Bask, 2001; Berglund, 1999).

The trend of customize logistics service as well as integrated logistics services are increasing (Berglund et al. 1999) (Hum 2000) (Chew and Graeve, 2003). A study was conducted by Coyle et al. (2003) showed that companies used multiple 3PL companies to carry out their logistics operations. For example, the General Motors was observed to have used twenty-five 3PL providers (see Table 1).

Table 1. Shipper using more than five 3PL

No	Shippers	Number of 3PLs used
1	General Motors	25
2	Ford	19
3	IBM, Wal-Mart	15
4	Hewlet –Packard, Procter & Gamble	14
5	Dupont	11
6	Chrysler	10
7	Motorola, Toyota, Compac, Xerox	8
8	Honda, Nestle, Goddyear, Kraft	7
9	Colgate-Palmolive, Nissan, Quaker Oats	6

Source : Coyle et al., 2003

The 3PL continues to experience growth. As can be seen in table 2, the global 3PL revenue had increased about 13.7%.

Table 2. Global 3PL Revenues Up for 2010 – 2011

Region	2010 Global 3PL Revenues (US$Billions)	2011 Global 3PL Revenues (US$Billions)	Percent Change 2010 to 2011
North America	$ 149.1	$ 159.9	+ 7.2%
Europe	165.1	160.4	- 2.8%
Asia-Pacific	157.6	191.1	+ 21.2%
Latin America	27.5	39.5	+ 43.6%
Other Regions	42.3	65.2	+ 54.0%
Total	$ 541.6	$ 616.1	+ 13.7%

Source: Armstrong & Associates, 2012

The 3PL role is important to the growth of other sectors. It can be seen by large companies that use the services of more than five 3PL. In the future, it is expected that 3PL industry will continue to grow with a variety of services tailored to the needs of its customers.

3. THE GROWTH OF THIRD PARTY LOGISTICS INDUSTRY

Changes that take place in an industry over time are an important determinant of the strength of the competitive forces in the industry. According to Porter (1980) competitive force is the collective strength of these forces like bargaining power of buyers, bargaining power of suppliers, relative power of unions government special interest group, etc) to determine the ultimate profit potential in the industry, where profit potential is measured in term of long-run return on invested capital. A useful tool to analyze the effects that industry evolution has on competitive advantages and industry life-cycle model (Hill and Jones, 2013).

The last ten years, industry growth had brought with them profound changes in the national economy and in the global marketplace which would radically alter the way enterprises did a business. The emergence of 3PL industry was a major phenomenon of the 1990s. The

development can be divided in five main phases according to the type of service it provided, namely:

Table 3. 3PL Evolution

Phase Period	Phase Name	Characteristic
Early 1900s – Late 1950s	Introductory Period	Single Service
Late 1950s – Mid 1960s	Awareness Period	Separate Service
Mid 1960s – Late 1970s	Necessity Period	Integrated Service
Late 1970s – Late 1980s	Integration Period	Combined Service
Late 1980s – Late 1990s	Differentiation Period	Complex Combined Service

Source : Papadopoulou (2000)

Since early 1900s when 3PL began to exist with single service, the 3PL started to evolve from simple into more complex services. In its early existence, the activities in 3PL were less varied but then they grew more and more remarkably complicated (Berglund et al. 1999; Papadopoulou 2000). In more recent years, 3PL necessity to build joint venture with companies overseas by providing specialized services to customers was required. Joint venture between a foreign corporation and a domestics company is the most popular strategy that used to enter a new country, to combine the resources and expertise needed in develop new product or technology. So that can enter another country with fewer assets at stake and lower risk (Wheelen & Hunger, 2012).

4. THE DETERMINANTS FACTORS OF GROWTH IN THE 3PL INDUSTRY

From some of the literature, it is known that the growth of the logistics industry can be determined by several determinants (figure 1).

Economic growth will encourage increased consumption, so that ultimately impact on the growth of trading volume. Then it affects into the logistics industry, and also the role of the hands of producers to deliver goods for the consumer. In macro-economic framework, the transport is the backbone of the national economy, regional, and local, urban and rural. the transport system has the properties of a network system in which the transportation service performance is strongly influenced by the integration and alignment networks among actors (Cheng et al. 2010). Logistics industry plays an important role in the regional economic development such as promoting coordinated development of regional economy and upgrading industrial optimization (Huang et al., 2013; Luan et al., 2012; Cheng et al. 2010; Qin, 2010). For example in China, where 3PL industry growth develop fast if compare with other asia country.

Currently, the logistics industry in China is in the stage of steady growth. The stability of the logistics industry due to the improvement of infrastructure, the service improvement through increased service innovation, revenues, averaging a 44 per cent increase 55 per cent (survey Lieb, 2008) and government support (Huang et al. 2013; Lin 2007). Hence, logistics industry has become an important force to promote the growth of regional economic growth, the basic and pillar industries of regional economy, which is urgently needed to solve by the government. In recent years, the economic development pattern and industrial structure based on the service have been gradually formed in the developed countries. In the developing countries represented by China and India present a positive development trend (Huang et al. 2013). Logistics have a special position in the service sector, as market competition intensifies and supply chain network expands, the complexity of the logistics operation also continues to increase.

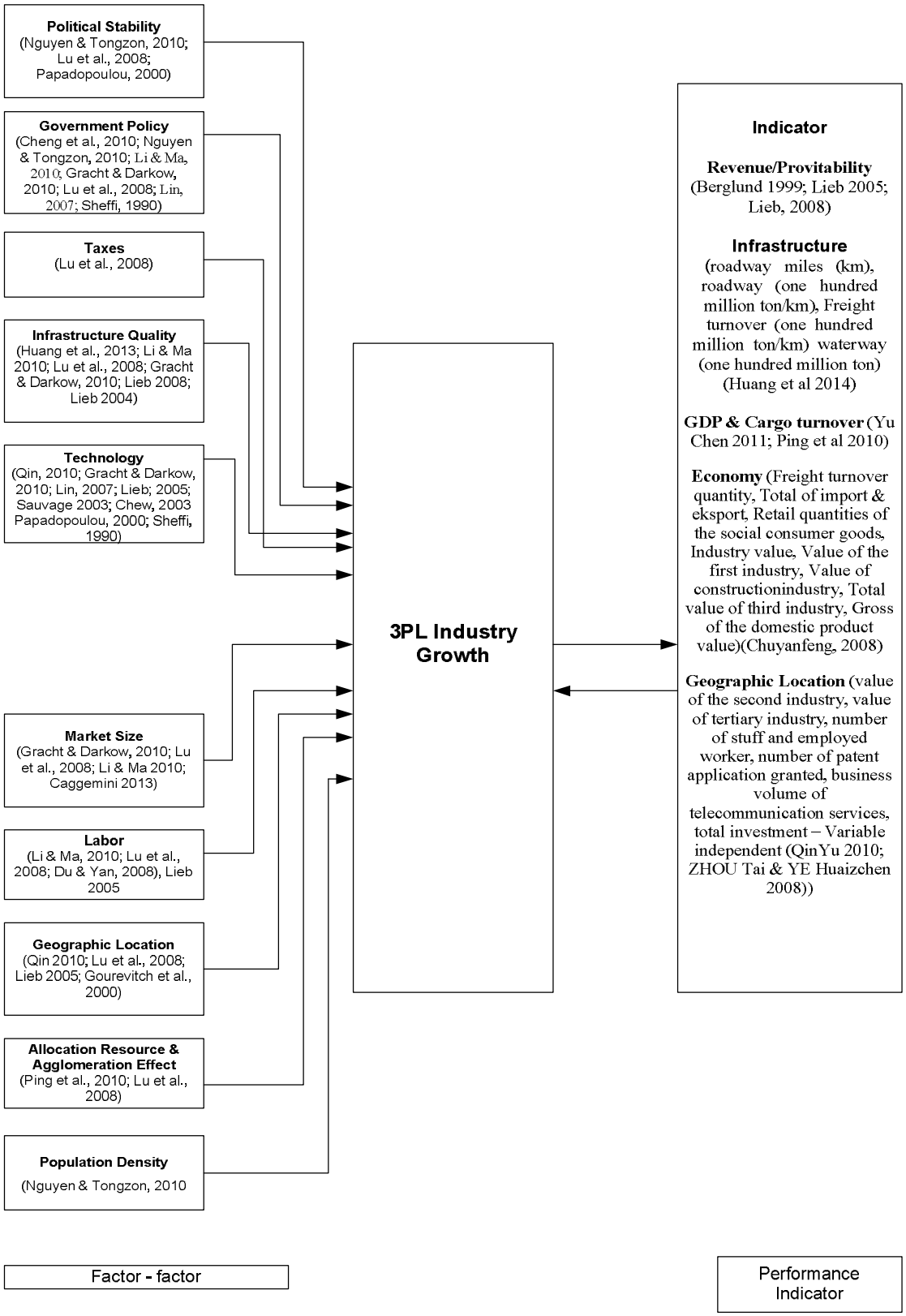

Figure 1. Framework determinants in 3PL industry growth

Chu & Liu (2008) explained Chinese logistics industry develops fast, point out development direction of logistics industry in future. Economic factor is measured to the gross of the domestics product value and the freight turnover quantity, the total of import and export, the retail quantities of the social consumer goods, the gross value of industry, the gross value of first industrial, the total value of construction industry, the total value of third industry, the gross of the domestic product value to logistics industry. Furthermore, Lu et al. (2008) explained industry logistics in stage growth especially, driver by investor to investment. So that. this will affected from manufacturing demand to service 3PL industry.

4.1 Infrastructure

Infrastructure has an important role in ensuring the movement of goods both in urban, inter-provincial, and state. The transportation system of intermoda or multimoda are the transport access from production centers to ports and airports (Rushton, 2002). If the integration cannot run smoothly because the infrastructure of port and airport, then this is resulting in a low quality of logistics services and rates to be expensive. In the future, this will affect the growth of the logistics industry. One of the infrastructures of a country's logistics sector indicators is the construction of facilities. Development "hub port" international scale which it is functioned as the goods flow control centre through the "port" namely by air or sea (Chen 2011). The movement of goods from one mode to the other modes should carried out smoothly, quickly, accurately, and cost-customized. Hence, information technology and communication is needed to balance logistics system and reduce the total cost logistics operational (Gilmour, 1999). However, infrastructure not only facilities from the state of transportation but also telecommunication system.

Transport infrastructure is become to attractiveness investment. According to Lu et al. (2008) the sustained attractiveness of industry logistics for manufacturers has made investment so that manufacturers use logistics industry due to provide more flexible linkage between the in-and out-flows of goods from country to country and to expand their global markets. However, infrastructure still becomes a problem. According survey (Lieb 2008) explained that lack of a modern transportation infrastructure as something that might limit future economic growth. The reason due to long trip times for relatively short transportation distances make a turnaround of vehicles impossible and increases the cost of domestic transportation. congestion, toll road blocks, and local taxes make proper planning and timing, and central distribution structures impossible. Gracht & Darkow (2010); Lu et al. (2008) explained that infrastructure became determinant to investment from manufacturing firms and this will affect in develop industry 3PL.

4.2 Government Policy

The Government policy about 3PL industry growth relates with economy growth, namely at trade, investment and development innovation of technology (Cheng et al. 2010; Gracht & Darkow, 2010; Lu et al., 2008; Li & Ma, 2010; Lin, 2007; Sheffi, 1990). Lu et al., (2008) explained that the growth of foreign investors can encourage the growth of the logistics industry. The appeal of manufacturers has made consideration of investment and an important issue for those concerned. The global economy and limited resources become an important reason that the chosen investment decisions entirely to help manufacturers and their interests. So, it becomes important for the Government as policy makers seek to attract and retain foreign investment to have a better understanding of the needs of investors, managerial behaviors, and how producers can earn revenue with the usage of the logistics industry, especially in environment an increasingly competitive.

Lin (2007) explained that innovation in logistics technologies for the logistics industry in China. China's logistics providers can draw up better strategies to construct their technological innovation systems and to make them become innovation-based logistics service providers. Government role should give strong support for logistics industry in adopting innovative logistics technologies and policies to encourage private sector performance improvements through trade and inter-modal policies, infrastructure investment and development, creative financial arrangements, tax incentives, safety regulation, public/private partnerships, and special programs and projects (Morash and Lynch, 2002 in Lin, 2007). It is purposed to attract of investment so can affect to 3PL industry growth.

The Government policy about a national logistics is to determine the distribution path of optimal on the smooth flow of goods. The trajectory of distribution optimal is the trajectory of the flow of goods and the location with the lowest cost, shortest time and shortest distance (Rushton, 2002).

Policy or regulatory is needed in logistics industry planning but it currently still become problems (Lieb, 2008). So that especially in Indonesia, it relates to direction of economic policy in trade and investment namely the policies taken include: policy in the determination of foreign trade, domestic trade and policy decisions of investors (Nguyen, 2013).

4.3 Political Stability

Political stability is the uncontrolled factors or external boundaries and opportunities affecting the company's logistics in strategic planning (Papadopoulou 2000). Political stability will indirectly affect the growth of the logistics industry and investment (Lu et al. 2008). Turbulent geopolitical changes modified the whole structure of the socio – economic. Such as, this period is characterized by change of government, oil crisis, rise and fall of fuel prices brought uncertain political stability and this incident will have an impact on the growth of 3PL industry. This situation also will affect the investors to invest. This is due to fears of investments would incur a loss if the stability of the country is not safe. Gracht & Darkow (2010) adding that political stability can affect the growth of the 3PL industry due to International barriers of trade, example issues about the commitment of the World Trade Organization (WTO) and the various free trade areas (FTA) has been agreed between the governments of the countries with governments of other countries.

4.4 Technology

A growing number of shippers are coming to rely on industry 3PL for technology solution. 3PL industry specializes in understanding new technologies and uses them to get substantial value to shippers (Qin 2010; Gracht & Darkow, 2010; Lin, 2007; Chew and Graeve, 2003; Papadopoulou 2000; Sheffi 1990). Companies increasingly rely on their logistics providers for expertise in complex technologies such as Transportation Management Systems (TMS), Warehousing Management System (WMS), Supply Chain Event Management (SCEM) and International Trade Logistics Systems (ITLS). Thus, shipper can take benefit from tapping the knowledge from 3PL industry through this experience. In the logistics industry, providers will depend on coordination and partnership to timeliness, visibility and transparency that are important strategic capabilities to achieve relatively easily. Thus, its significance enhance its relationship with customers (Lieb 2008). So that, when industry manufacturing grew through structural changes, entering and exiting new markets, the role of industry 3PL becomes evident in their ability to offer advanced technology system for competitive.

Connectivity between information systems and communication between port infrastructure with transport intermodal ports and multimodal must be effective and efficient. The movement of goods from one mode to others should carried out smoothly, quickly, accurately, and cost-customized, so that Information technology and communication, TMS, WMS, SCEM, ITLS is needed by industry logistics as a development tool since it can lead to increased economic activity and the encouragement of growth in Industry (Gracht & Darkow 2010; Lin 2007; Chee Mun Chew & Graeve 2003; Papadopoulou 2000; Gilmour, 1999; Sheffi 1990). In the future, Shippers want industry 3PLs to offer comprehensive and easily integrated solutions (Qin 2010; Capgemini 2013).

4.5 Market Size

Manufacturing is the market of industry 3PL. Under the pressure of competition in the market and due to focus on core competency to implement, so that manufacturing and logistics enterprises have increased the depth of cooperation and joint development is increasingly apparent (Li & Ma, 2010), for example Unilever and DHL. The size of the market can affect the growth from the logistics industry. Based on data known (Figure 1) reflects the eight largest industries of respondents using 3PL services and the largest manufacturing(Survey-Capgemini 2013). In the future, this market will become an opportunity to increase revenue of 3PL (Figure 2).

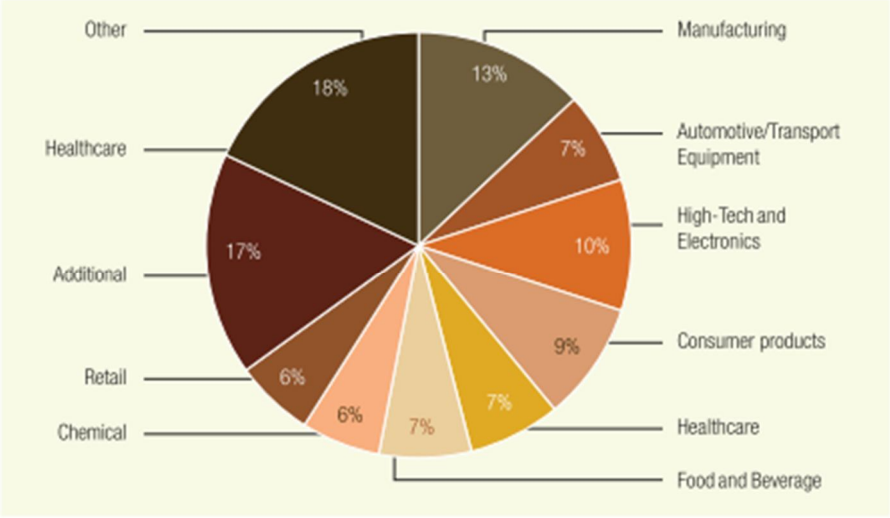

Figure 2. The eight largest industries of using 3PL Services

4.6 Geographical Location

Qin (2010) explained that geographical location play an important role in logistics industry. The logistics industry value added will depends on the second industry and tertiary industry. Coefficients of value of the second industry and value of tertiary industry are positive; it means that regional economic development will pull logistic development. Similarly, Lu et al., (2008) explained that geographical location affects to investment. Rapid change in the geographical location become important as competitive position of different countries and regions (Gourevitch et al., 2000 in Lu et al. 2008). Generally, Researcher founds that the decision choose geographical location due to labor cost, skill, agglomeration effect and government policy. So, this will affect to logistics industry growth especially the reach to service.

4.7 Population Density

Nguyen (2010) explains that the populatiofc tyyhn density factors can affect the state's investment in the development of their the region, especially for infrastructure development. This will support the smooth process of goods delivery. Thus, investment in transport infrastructure is the best way while encouraging economic growth and trade. The reason another improving the efficiency of the transport sector. Thus, the low population density areas only increase the utilization of existing transportation infrastructure system, in contrast to the high population density. In addition, a national transportation policy should be oriented towards exports, and there is a need to ensure that investment is directed to areas or regions most in need.

4.8 Taxes

Lu et al (2008) explains that the attractiveness of foreign investors influenced by many factors, one of the tax. International Labor Organization (ILO, 1998 in Lu et al., 2008) suggest that investors build manufacturing in a country because of the tax reduction, ease of customs taxes in import and export activities. Furthermore, it can stimulate investors to multiply their business activities and will indirectly affect to the growth of the 3PL industry in the delivery of products primarily to increase revenue. Usually, this tax is identical to the rules and policies set by the government and authorities. So the need for government intervention is also a definite regulatory arrangements (Lieb 2008).

4.9 Labor

According to Lu et al (2008); Li & Ma (2010) explained that these studies have concluded that investment attractiveness may be influenced by factor labor force. From these explanations, it can be concluded that the labor force affects the interest of investors in making an investment. Hence, it will affect to hire worker. Du and Yan (2008) explained that based on the empirical study on the competitiveness of logistics industry, which researcher devides the evaluation indicator system in 3 first-level indicators, one of indicator is scale of logistics services supply, namely total number of staff and workers to logistics industry (person) and skill as important variables to 3PL industry growth.

4.10 Resource and Agglomeration

Agglomeration effects are the concentration of economic activities in one location (Sun et al., 2002 in Lu et al., 2008). Porter (1991) stressed the importance of multinational firms use of relevant another firms support to create competitive advantage, such as downstream or upstream industries. For example, suppliers and end-users located in close proximity can take advantage of short lines of communication, quick and constant flow of information (Porter, 1991 in Lu et al, 2008). Padeiro (2013) explained importance direct access to transportation and important for manufacturing for location which is based agglomeration, due to will depend on the mode of transport. Thus, resources and agglomeration estimated to affect in 3PL industry growth.

5. CONCLUSION AND FUTURE RESEARCH

From the literature review, almost researchers argued that factors 3PL industry growth still segmented. However, the factors another is estimated to important for 3PL industry growth. It is depicted at developed framework on figure 2.

At a previous study, indicators was segmented Future research is needed not only deciding factor but also to identify performance indicators. Then develop a model using simulation models of several scenarios that will be set. Scenario development, is mainly based on qualitative and quantitative research for strategic planning. Finally, the determination of policy in dealing to increase the growth of the 3PL industry especially in Indonesia need to be revealed.

Some prospective future research would be needed to investigate what the key determinants of growth in 3PL industry are, how those determinant contribute, how is the relationship between 3PL industry and other sectors and how 3PL industry contribute to the national development.

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