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**THE EFFECT OF CITY LOGISTICS PERFORMANCE AND GREEN LOGISTICS PRACTICES ON ENVIRONMENTAL PERFORMANCE AS WELL AS FIRM PERFORMANCE DRIVEN BY STAKEHOLDERS IN THE FREIGHT FORWARDING INDUSTRY IN BOGOR CITY**

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**ABSTRACT.** *High greenhouse gases in the form of CO<sub>2</sub> are contributed by the transportation industry. The rapid development of the transportation industry is not accompanied by green logistics practices. As a result, the process of reducing greenhouse gas emissions runs slowly. Seeing these problems, there needs to be encouragement from stakeholders to improve city logistics performance and accelerate the occurrence of green logistics practices and see their effects on environmental performance and firm performance. This study aims to analyze the drive of stakeholders to implement sustainability practices in the shipping service industry in the city of Bogor, as well as its effect on city logistics performance. A questionnaire survey on logistics companies in Bogor city was conducted, and 150 samples were analyzed using SEM-AMOS. The results revealed that the practice of green logistics in five delivery service companies located in the city of Bogor has not been applied. Stakeholder encouragement has a positive effect on city logistics performance, green logistics practices and environmental performance. The results of this study also showed no positive relationship between the city logistics performance to the firm performance. There is no positive relationship between green logistics practices on environmental performance and firm performance.*

**ABSTRAK.** Gas rumah kaca yang tinggi berupa CO<sub>2</sub> disumbangkan oleh industri transportasi. Pesatnya perkembangan industri transportasi tidak dibarengi dengan praktik green logistics. Akibatnya, proses pengurangan emisi gas rumah kaca berjalan lambat. Melihat permasalahan tersebut, perlu ada dorongan dari pemangku kepentingan untuk meningkatkan kinerja logistik kota dan mempercepat terjadinya praktik logistik hijau serta melihat pengaruhnya terhadap kinerja lingkungan dan kinerja perusahaan. Penelitian ini bertujuan untuk menganalisis dorongan pemangku kepentingan untuk menerapkan praktik keberlanjutan dalam industri jasa pelayaran di Kota Bogor, serta pengaruhnya terhadap kinerja logistik kota. Survei kuesioner pada perusahaan logistik di kota Bogor dilakukan, dan 150 sampel dianalisis menggunakan SEM-AMOS. Hasil penelitian menunjukkan bahwa praktik green logistics di lima perusahaan jasa pengiriman yang berlokasi di Kota Bogor belum diterapkan. Dorongan pemangku kepentingan berdampak positif pada kinerja logistik kota, praktik logistik hijau, dan kinerja lingkungan. Hasil penelitian ini juga menunjukkan tidak adanya hubungan positif antara kinerja logistik kota dengan kinerja perusahaan. Tidak ada hubungan positif antara praktek logistik hijau pada kinerja lingkungan dan kinerja perusahaan.

## INTRODUCTION

Logistics is the process of managing, moving and storing production goods, spare parts or finished goods from providers to consumers, according to Ariesy Tri Mauleny in the book *advancing competitive Indonesian Logistics*. Logistics (Firdausy, 2021) can also be interpreted as the process of moving, arranging and storing goods, starting from the delivery stage to the end customer, all of which are arranged in one supply chain.

Cargo transportation in city areas is one of the major disruptions of life in cities. Congestion, illegal parking practices, environmental disturbance (gas and noise emissions), the risk of accidents, increased logistics costs and the consequent impact on the lives of people living in city areas or working in cities. This situation is likely to increase, as the number of cargo vehicles moving in city areas doubles and is expected to continue to grow at an accelerated pace. This is due to current production and distribution practices based on zero stock and on-time delivery, the growth of e-commerce and especially the trend of global urbanization, with the migration of people from villages. According to the data (inventory of GHG emissions of energy fields, n.d.) Pusdatin.esdm 2020 road transport including private cars, trucks and buses is the second largest contributor to air pollution. Transport contributes 24.64% of all greenhouse gases.

In 2019, the transportation or logistics category emitted 157,326 Gg of CO<sub>2</sub> with an average increase of 7.17% per year. This increase in emissions is directly proportional to the increase in fuel consumption which reaches 7.56% per year. With the above conditions, the transportation or logistics category is expected to contribute large amounts of emissions in the future, considering that vehicles with fossil fuels are still being produced. In this regard, the logistics industry is facing increasing pressure to implement carbon management in order to improve the efficiency of logistics activities for economic development and to reduce the adverse impact of logistics activities on the environment (Herold & Lee, 2017). The implementation of green logistics practices in logistics business activities is also an important prerequisite for reducing the negative environmental impact of logistics processes. Green logistics practices, particularly green transportation, reverse logistics, waste management, sustainable packaging and distribution, green monitoring and evaluation, and sustainable information sharing, affect the environment and financial performance of companies, (Baah et al., 2021), (Maas et al., 2018) although green practices are financially draining in the implementation phase, they significantly improve financial performance (Return on investment, Return on assets, sales growth and profitability and total operating costs) over the long term, (Shashi et al., 2019).

Companies and other logistics actors together with the government need to continue to make improvements in reducing carbon emissions. Implementation of low-carbon policies has a significant impact on the effect of reducing gas emissions (Yang et al., 2021). One form of innovation that is getting more attention for the community is the ability to run an environmentally friendly logistics business. However, the implementation of the concept is still a tough choice for companies in terms of financing. Therefore, it is necessary to implement a green concept strategy that also remains profitable for the firm (Mutie et al., 2020).

It is determined that to adopt the practice of green logistics consists of external and internal factors (Y. Zhang et al., 2014) the most influential external environmental factors are related policies and regulations (Y. Zhang et al., 2014) (Vienažindienė et al., 2021), (Lin & Ho, 2011). While the main factor of the internal environment is the Environmental management Strategy at the firm (Y. Zhang et al., 2014). And pressure from stakeholders (Maas et al., 2018), (Sureeyatanapas et al., 2018).

## LITERATURE REVIEW

### Green Logistics Practice

Green logistics practice is a way to improve ecological, economic, and social sustainable development by reducing firm operating costs and saving energy without damaging the natural environment and society, while improving people's quality of life. (Vienažindienė et al., 2021) et al., 2021). According to (Jan et al., 2019) proactive action or environmental reactivity of the firm demonstrated in various ways through the adoption and application of practices that seek better operational consequences on the environment.

### City Logistics Performance

Logistics is defined as the process of planning, executing and controlling the efficient and effective flow of goods, services and related information from the point of origin to the point of consumption for the purpose of meeting customer needs. (E. Taniguchi, 2001), (Taniguchi et al., 2003) defines municipal logistics as the total process of optimization of logistics activities by private companies in city areas, with the support of sophisticated information systems, taking into account the traffic environment and its congestion, safety and energy consumption.

### Firm Performance

Firm performance includes business results, firm operations and consequences of operational activities (Tumasjan et al., 2020). Also a standard measure of the success of a firm in managing its operations (Setiawan & Suhardi, 2006). Companies that can maintain their performance usually remain competitive in the market which ultimately leads to higher performance. In the green logistics sector, corporate performance for Supply Chain Operations focuses on cost savings, gaining market share, and profit growth (Chien & Shih, 2007).

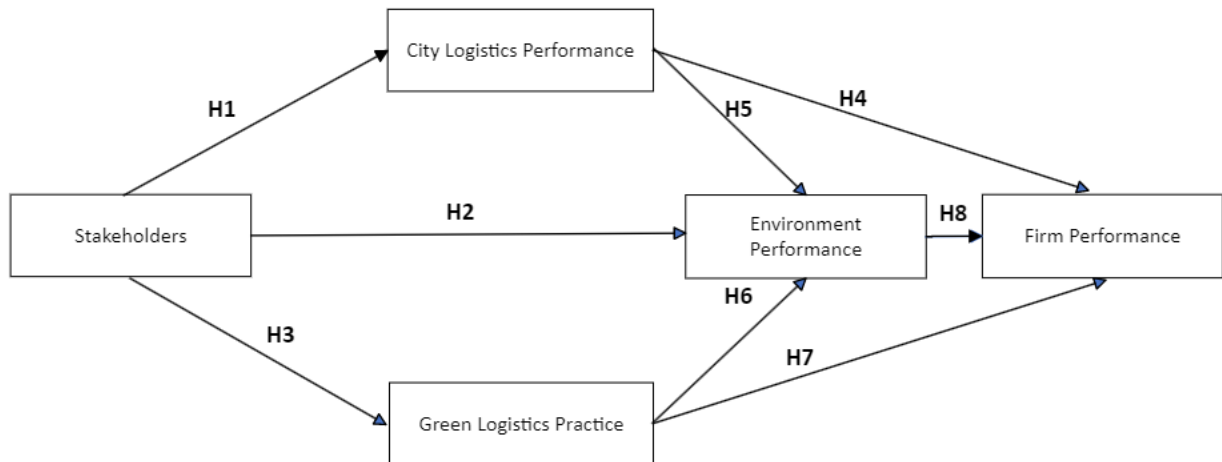
### Environmental Performance

The environmental impact of the logistics sector has received increasing attention. It can be said that the aspect of environmental sustainability is mainly related to climate change, or in other words global warming. Global warming is the increase in average temperatures due to emissions of greenhouse gases (GHGs) such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (NO<sub>2</sub>). Since carbon dioxide (CO<sub>2</sub>) is the most common GHG in terms of quantity released and total impact on global warming, it is often measured as carbon dioxide (CO<sub>2</sub>-e) equivalent, (Simnett et al., 2009).

## Stakeholders

Stakeholders include both internal and external stakeholders (Sarkis et al., 2010) internal stakeholders are relevant to training because employees are often the initiators and recipients of an organization's environmental activities (Daily & Huang, 2001), (Hanna et al., 2000). External stakeholders, unlike internal stakeholders, have no control over organizational resources (Sharma & Henriques, 2005).

## Conceptual Framework



**Figure 1 : Conceptual Framework of Research**

## Hypothesis Development

- H1:** Stakeholders have a positive influence on city logistics performance.
- H2:** Stakeholders have a positive influence on environment performance.
- H3:** Stakeholders have a positive influence on green logistics practices.
- H4:** City logistics performance has a positive influence on the firm performance.
- H5:** City logistics performance has a positive influence on environment performance.
- H6:** Green logistics practices have a positive influence on environment performance
- H7:** Green logistics practices have a positive influence on firm performance
- H8:** Environment performance has a positive influence on firm performance.

## METHODOLOGY

### Research Design

In this study using 8 hypotheses that will explain the relationship of stakeholder influence on city logistics performance and green logistics practices and also its influence on environmental performance and firm performance. This research is categorized as hypothesis testing research. Hypothesis testing itself is used to see if the variables examined have a positive influence in accordance with the formulation of the hypothesis. In addition, in this research design using causal hypothesis or commonly called causal relationship. Causal hypothesis can be defined as a guess

or a temporary answer to the formulation of the problem that states the influence of predictor factors on the response variable (Nasution, 2020). The time dimension used in this study is cross section. Cross section itself is a type of data consisting of variables that are collected on a number of individuals or selected respondents at a certain time (Trianto, 2015). The object of this study is a business actor in the logistics industry delivery services, which will be the object will fill out a questionnaire to answer the statement that has been formulated in this study. Then the unit of analysis that will be used in this study is an individual consisting of employees of freight forwarders ranging from staff, senior staff, supervisors, and managers in the city of Bogor, West Java.

### Variables and measurements

This study uses independent variables (independent variables), dependent variables (dependent variables).

#### Independent Variable

Independent variables used in this study are stakeholders who have three indicators, namely government/regulators, business partners, and firm management. These three indicators are used to determine the extent to which it can affect the performance of city logistics and green logistics practices which are ultimately expected to reduce carbon emissions that result in the greenhouse effect.

#### Dependent Variable

Dependent variable used in this study is the performance of the firm, which has 3 indicators, namely profitability, market share, and customer satisfaction. To see the extent to which the activities of the green logistics practices of a firm can have an impact on the firm's performance of the firm itself. Interval scale in this study started from 1-5 with the following explanation:

**Table 1**  
**Measurement Scale**

| Respondent Answers     | Weight |
|------------------------|--------|
| Strongly disagree (SD) | 1      |
| Disagree               | 2      |
| Quite Agree (QA)       | 3      |
| Agree (A)              | 4      |
| Strongly Agree (SA)    | 5      |

**Table 2**  
**Research statement, variables and dimensions**

| Variable     | Dimensions             | Item | Statement  | Source   |
|--------------|------------------------|------|--|--|
| Stakeholders | Regulator / Government | PK1  | The government encourages my firm to implement environmentally friendly logistics. | Sarkis et.al.2010; Baah et.al.2020; Zhang et.al.2014; Vienazindiene et.al.2021 |
|              | Business Partners      | PK2  | Partners encourage my firm to implement  |  |

|                                   |   |       |   |                        |
|-----------------------------------|---|-------|---|------------------------|
|                                   |   |       | environmentally friendly logistics  |                        |
|                                   | Firm Management                         | PK3   | Vision and Mission My Firm encourages my firm to implement environmentally friendly logistics   |                        |
| <b>City Logistics Performance</b> | Integration                             | PLP1  | My firm can deliver the goods easily to the recipient   | de Carvalho et.al.2019 |
|                                   |   | PLP2  | My firm can deliver the goods quickly to the recipient  |                        |
|                                   |   | PLP3  | My firm can reach a large enough area   |                        |
|                                   | Efficiency                              | PLP4  | My firm can save transportation costs and logistics costs                                       | de Carvalho et.al.2019 |
|                                   |   | PLP5  | My firm can produce more output   |                        |
|                                   | Responsiveness                          | PLP6  | My firm can deliver the goods in time   | de Carvalho et.al.2019 |
|                                   |   | PLP7  | My firm made the delivery without any errors  |                        |
|                                   |   | PLP8  | My firm has adequate customer service   |                        |
|                                   | Sustainability                          | PLP9  | My firm enhances good relations with the community, stakeholders and other community activities | de Carvalho et.al.2019 |
|                                   |   | PLP10 | The firm increased sales and expanded market share  |                        |
|                                   |   | PLP11 | My firm is improving the implementation of green environmental standards                        |                        |
| <b>Green logistics practice</b>   | Environmentally friendly transportation | PLH1  | We monitor vehicle speed to save fuel and reduce emission levels on our vehicles.               | Baah et al.2020        |

|                                  |                              |      |   |  |
|----------------------------------|------------------------------|------|---|--|
|                                  |                              | PLH2 | We use alternative fuels in our vehicles.   |  |
|                                  | Route Optimization           | PLH3 | We carry out effective delivery consolidation and maximum loading/unloading on vehicles               | Vienažindienė, M., Tamulienė, V., & Zaleckienė, J. (2021)              |
|                                  |                              | PLH4 | We improve routes and travel schedules to reduce transportation distances and times.                  |  |
|                                  | Eco-friendly warehouse       | PLH5 | We use alternative energy sources in our warehouse.   | Zhang et al.2014   |
|                                  |                              | PLH6 | We have eco-friendly building design (energy-saving lighting system, thermal insulation of buildings) | Sarkis et.al.2010; Colicchia et al., 2013; Sureeyatanapas et al., 2018 |
| <b>Environmental Performance</b> | Greenhouse gas emissions-CO2 | PL1  | We contribute to reducing the effects of greenhouse gases   | lai & Wong et al.2012  |
|                                  |                              | PL2  | We are responsible for a more sustainable environment.  |  |
| <b>Firm Performance</b>          | <i>Profitability</i>         | PP1  | We managed to increase the amount of profit and profit over time.                                     | Yingfei et al., 2022   |
|                                  | <i>Market Share</i>          | PP2  | We are experiencing market share growth.  | Baah et al.,2020   |
|                                  | Customer Satisfaction        | PP3  | Our resources and management capabilities enable us to achieve total customer satisfaction.           | Maat et.al.2018  |

### Data Collection Methods

This study uses primary data obtained by distributing questionnaires online through linkedin media or directly by providing barcode codes, then respondents scan them using their respective mobile phones. Data collection was carried out in five freight forwarding companies. These companies operate in the city of Bogor and have a wide market share and employees that can be said a lot.

### **Sampling Method**

Probability sampling is used for sampling method in this study. Probability sampling itself is defined as a sampling technique that provides an equal opportunity or opportunities for all members or populations to be selected directly as members of the research sample. This technique is also a technique that can allow researchers or evaluators to make generalizations from sample characteristics to population characteristics (Retnawati, 2015). The population in this study is a company in the logistics industry delivery services, in the city of Bogor, West Java.

### **Data Testing Method**

Whether or not a research instrument is determined by its reliability and validity. Validity is used to measure the validity or validity of an instrument. While reliability tests the extent to which a measurement can be trusted because of its accuracy (Yusup, 2018). In addition, an instrument can be said to be valid when it can reveal data from each variable precisely and not deviate.

### **Validity Test.**

Validity test analysis was used to confirm the indicators of the research structure (Mehdikhani & Valmohammadi, 2019). Validity is the accuracy or accuracy of an instrument in measurement. Indicators in a measurement variable that have a poor charge or composition will be eliminated from the measurement of the research model (Mehdikhani & Valmohammadi, 2019).

### **Reliability Test.**

Reliability test of research instruments is to be able to measure the consistency of measuring instruments used in quantitative research. In this case the test is done to determine whether there is accuracy of measurement results on the same sample in different times. So that a research instrument in this case the questionnaire can be said to be reliable if the instrument can provide consistent score results in each measurement (Budiastuty & Bandur, 2020).

### **The Goodness of Fit test**

According to (Hair, n.d.) goodness of fit testing is done by several criteria, namely:

#### **1. Absolute Fit Measure, with criteria:**

- a. The likelihood Ratio Chi-Square Statistic**, while the minimum significant level in this measurement is 0.05 and 0.01
- b. Goodness of Fit Index (GFI)**, this test States the model is good (good fit) obtained  $\geq 0.90$ , while if the value is obtained  $\leq 0.90$ , it is concluded to be marginal fit.
- c. Root Mean Square Error of Approximation (RMSEA)**, this model is said to be getting better if the acceptance value of RMSEA  $\leq 0.08$

#### **2. Incremental Fit Measure, with criteria:**

- a. Adjusted Goodness of Fit (AGFI)**, in this measurement the recommended value of AGFI obtained  $\geq 0.90$
- b. Normed Fit Index (NFI)**, in this measurement the recommended value of NFI  $\geq 0.90$



**c. Tucker Lewis Index (TLI)**, the recommended value of  $TLI \leq 0.95$  declared good fit model, the value of  $TLI 0.8 \leq TLI 0.90$  then said to be marginal fit

**d. Comparative Index Fit (CFI)**, in this measurement considering the complexity of the model, recommended CFI value  $\geq 0.95$  where the mode is considered appropriate.

**3. Parsimonious Fit Measure**, with criteria: a measurement of goodness of fit model with the number of estimated coefficients in order to achieve the level of healthiness of the model, while the recommended value for acceptance of the model is  $<2.0$  or  $3.0$  (Yordan et al., 2019).

### Data Analysis Methods

The data obtained in this study were obtained through the distribution of questionnaires and have been tested for validity and reliability, then performed data modeling using SEM (Structural Equation Model). a set of statistical techniques that allow a relatively complex series of relationships to be formed at the same time (Hair, n.d.). In this study, the structural equation model (SEM) is run through the AMOS program.

## ANALYSIS AND DISCUSSION

### Description Of Research Data

The distribution of questionnaires was carried out to 200 people, 164 questionnaires were returned, but due to time constraints and there were some respondents who did not fit the sampling criteria, namely the location of work in the city of Bogor. Then the data obtained in this study as many as 150 respondents. Data collection was carried out for 3 weeks, namely from May 23, 2022 to June 10, 2022.

The distribution of questionnaires was carried out by visiting each firm and meeting representatives of the firm and then submitting questionnaires in the form of barcode codes to be scanned through the mobile phones of each respondent. Or other evolutionary shared through the approach on social media linkedin. The characteristics of respondents from this study include the following:

**Table 3 Characteristics of Respondents**

|                 | Frequency (%) |
|-----------------|---------------|
| <b>Gender</b>   |               |
| Pria            | 111 (74)      |
| Wanita          | 39 (26)       |
| <b>Position</b> |               |
| Senior Staff    | 20 (13.22)    |
| Staff           | 105 (70)      |
| Supervisor      | 25 (16.67)    |

Source: Data questionnaire

## Descriptive Statistics

Descriptive statistics are statistics used to analyze data by describing or describing the data that has been collected as it is without intending to make conclusions that apply to the general or generalization (Sugiyono, 2019). The results of descriptive analysis are then used to obtain the tendency of respondents' answers regarding the condition of each construct or research variable (Siswono & Wardoyo, 1995)

The grouping of respondents' assessments is intended to determine the tendency of respondents' answers to each variable, will be based on the value of the average score (index) which is categorized in the range of scores based on the following calculations

In this study used the criteria of 5 boxes (five Box Method) or  $(k) = 5$  number of respondents' answers starting from Number 1 to 5, so that the categorization of answers using the provisions of the range  $(r) = 5 - 1$  (the highest average score minus the lowest average score) = 4. And obtained class length  $(p) = r/k = 4/5 = 0.8$ . the range will be used as a basis for determining the average categorization of respondents' assessment of the variables used in this study as shown in the following Table.

**Table 4**  
**Guidelines for Categorization of The Average Score of Respondents**

| Average Score | Criteria  |
|---------------|-----------|
| 1,00 - 1,80   | Very Low  |
| 1,81 - 2,60   | Low       |
| 2,61 - 3,40   | Suffient  |
| 3,41 - 4,20   | High      |
| 4,21 - 5,00   | Very High |

Source: (Ferdinand, 2005)

**Table 5**  
**Stakeholder Descriptive Statistics**

| Descriptive Statistics |     |      |      |        |                |
|------------------------|-----|------|------|--------|----------------|
|                        | N   | Min  | Max  | Mean   | Std. Deviation |
| IEF1                   | 150 | 3    | 5    | 4.21   | .453           |
| IEF2                   | 150 | 3    | 5    | 4.15   | .408           |
| IEF3                   | 150 | 3    | 5    | 4.11   | .466           |
| Stakeholders           | 150 | 3.00 | 5.00 | 4.1533 | .38932         |
| Valid N (listwise)     | 150 |      |      |        |                |

Source: Output SPSS

**Table 6**  
**Descriptive Statistics Of City Logistics Performance**

| <b>Descriptive Statistics</b>     |          |            |            |             |                       |
|-----------------------------------|----------|------------|------------|-------------|-----------------------|
|                                   | <b>N</b> | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>Std. Deviation</b> |
| <b>CLP1</b>                       | 150      | 3          | 5          | 4.34        | .503                  |
| <b>CLP2</b>                       | 150      | 3          | 5          | 4.39        | .528                  |
| <b>CLP3</b>                       | 150      | 3          | 5          | 4.45        | .513                  |
| <b>CLP4</b>                       | 150      | 3          | 5          | 4.22        | .447                  |
| <b>CLP5</b>                       | 150      | 3          | 5          | 4.20        | .449                  |
| <b>CLP6</b>                       | 150      | 1          | 5          | 4.35        | .557                  |
| <b>CLP7</b>                       | 150      | 4          | 5          | 4.27        | .447                  |
| <b>CLP8</b>                       | 150      | 3          | 5          | 4.49        | .540                  |
| <b>CLP9</b>                       | 150      | 3          | 5          | 4.21        | .442                  |
| <b>CLP10</b>                      | 150      | 3          | 5          | 4.28        | .507                  |
| <b>CLP11</b>                      | 150      | 3          | 5          | 4.17        | .523                  |
| <b>Ciry logistics performance</b> | 150      | 3.36       | 5.00       | 4.3073      | .38823                |
| <b>Valid N (listwise)</b>         | 150      |            |            |             |                       |

Source: Output SPSS

**Table 7**  
**Descriptive Statistics of Green Logistics Practices**

| <b>Descriptive Statistics</b>   |          |            |            |             |                       |
|---------------------------------|----------|------------|------------|-------------|-----------------------|
|                                 | <b>N</b> | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>Std. Deviation</b> |
| <b>GLP1</b>                     | 150      | 2          | 4          | 2.54        | .539                  |
| <b>GLP2</b>                     | 150      | 2          | 5          | 2.50        | .599                  |
| <b>GLP3</b>                     | 150      | 2          | 5          | 3.33        | .880                  |
| <b>GLP4</b>                     | 150      | 2          | 5          | 3.35        | .891                  |
| <b>GLP5</b>                     | 150      | 1          | 4          | 2.33        | .629                  |
| <b>GLP6</b>                     | 150      | 1          | 4          | 2.37        | .607                  |
| <b>Green Logistics Practice</b> | 150      | 1.67       | 4.33       | 2.7367      | .58673                |
| <b>Valid N (listwise)</b>       | 150      |            |            |             |                       |

Source : Output SPSS

**Table 8**  
**Statistic Descriptive Environment Performance**

| Descriptive Statistics    |     |      |      |        |                |
|---------------------------|-----|------|------|--------|----------------|
|                           | N   | Min  | Max  | Mean   | Std. Deviation |
| EP1                       | 150 | 4    | 5    | 4.39   | .489           |
| EP2                       | 150 | 3    | 5    | 4.34   | .516           |
| Environmental Performance | 150 | 3.50 | 5.00 | 4.3633 | .46666         |
| Valid N (listwise)        | 150 |      |      |        |                |

Source: Output SPSS

**Table 9**  
**Statistic Descriptive Firm Performance**

| Descriptive Statistics |     |      |      |        |                |
|------------------------|-----|------|------|--------|----------------|
|                        | N   | Min  | Max  | Mean   | Std. Deviation |
| FP1                    | 150 | 2    | 5    | 4.48   | .564           |
| FP2                    | 150 | 3    | 5    | 4.38   | .539           |
| FP3                    | 150 | 3    | 5    | 4.53   | .514           |
| Firm Performance       | 150 | 3.33 | 5.00 | 4.4644 | .47124         |
| Valid N (listwise)     | 150 |      |      |        |                |

Source: Output SPSS

## Data Analysis

### Validity Test

Validity test is a test method intended to test how well the variables in the measuring instrument will be used for this study, which is intended to find the extent to which the accuracy and accuracy of the research instrument can show the phenomenon to be measured so that it can provide accuracy and accuracy of information (Sugiyono, 2019).

**Table 10**  
**Loading Factor Criteria Based on Sample Size**

| Factor Loading | Number Of Samples Requiredn |
|----------------|-----------------------------|
| 0,30           | 350                         |
| 0,35           | 250                         |
| 0,40           | 200                         |
| 0,45           | 150                         |
| 0,50           | 120                         |
| 0,55           | 100                         |
| 0,60           | 85                          |
| 0,65           | 70                          |
| 0,70           | 60                          |
| 0,75           | 50                          |

Source : Hair

Based on Table 12, it can be seen that with a sample of 150 respondents, the Standard Loading Factor used is 0.45. The basis for making the decision of the validity test is as follows:

- a. If Factor Loading  $\geq$  (0.45) then the question item is valid
- b. If Factor Loading  $<$  (0.45) then the question item is invalid

**Table 11**  
**Stakeholder Validity Test Results**

| <b>Code</b> | <b>Factor Loading</b> | <b>Result</b> |
|-------------|-----------------------|---------------|
| IEF1        | .859**                | Valid         |
| IEF2        | .900**                | Valid         |
| IEF3        | .884**                | Valid         |

Source: Output SPSS

**Table 12**  
**City Logistics Performance Validity Test Results**

| <b>Code</b> | <b>Factor Loading</b> | <b>Results</b> |
|-------------|-----------------------|----------------|
| CLP1        | .765**                | Valid          |
| CLP2        | .773**                | Valid          |
| CLP3        | .739**                | Valid          |
| CLP4        | .825**                | Valid          |
| CLP5        | .829**                | Valid          |
| CLP6        | .722**                | Valid          |
| CLP7        | .775**                | Valid          |
| CLP8        | .765**                | Valid          |
| CLP9        | .806**                | Valid          |
| CLP10       | .813**                | Valid          |
| CLP11       | .818**                | Valid          |

Source: Output SPSS

**Table 13**  
**Green Logistic Practice Validity Test Result**

| <b>Code</b> | <b>Factor Loading</b> | <b>Results</b> |
|-------------|-----------------------|----------------|
| GLP1        | .849**                | Valid          |
| GLP2        | .822**                | Valid          |
| GLP3        | .862**                | Valid          |
| GLP4        | .847**                | Valid          |

|      |        |       |
|------|--------|-------|
| GLP5 | .853** | Valid |
| GLP6 | .858** | Valid |

Source: Output SPSS

**Table 14**  
**Environmental Performance Validity Test Results**

| Code | Factor Loading | Results |
|------|----------------|---------|
| EF1  | .925**         | Valid   |
| EF2  | .933**         | Valid   |

Source: Output SPSS

**Table 15**  
**Firm Performance Validity Test Results**

| Code | Factor Loading | Results |
|------|----------------|---------|
| FP1  | .906**         | Valid   |
| FP2  | .833**         | Valid   |
| FP3  | .883**         | Valid   |

Source; Output SPSS

### Reliability Test

Reliability tests are conducted to find the extent to which the measuring instruments used can be measured without any errors so as to ensure consistency and accuracy of the instruments of the measuring instruments used (Sekaran & Bougie, 2017).

The reliability test makes decisions based on:

- Cronbach's Alpha is acceptable if the coefficient of Cronbach's Alpha  $\geq 0.6$ ,
- Cronbach's Alpha is poor acceptable, if Cronbach's Alpha coefficient  $< 0.6$

**Table 16**  
**Reliability Test Results**

| No | Variable                   | Number Of Statement Items | Cronbach's Alpha | Results  |
|----|----------------------------|---------------------------|------------------|----------|
| 1  | Stakeholders               | 3                         | 0.853            | Reliabel |
| 2  | City logistics performance | 11                        | 0.936            | Reliabel |
| 3  | Green logistics practice   | 6                         | 0.911            | Reliabel |
| 4  | Environment performance    | 2                         | 0.841            | Reliabel |
| 5  | Firm performance           | 3                         | 0.845            | Reliabel |

Source: Output SPSS

### Goodness of Fit Test

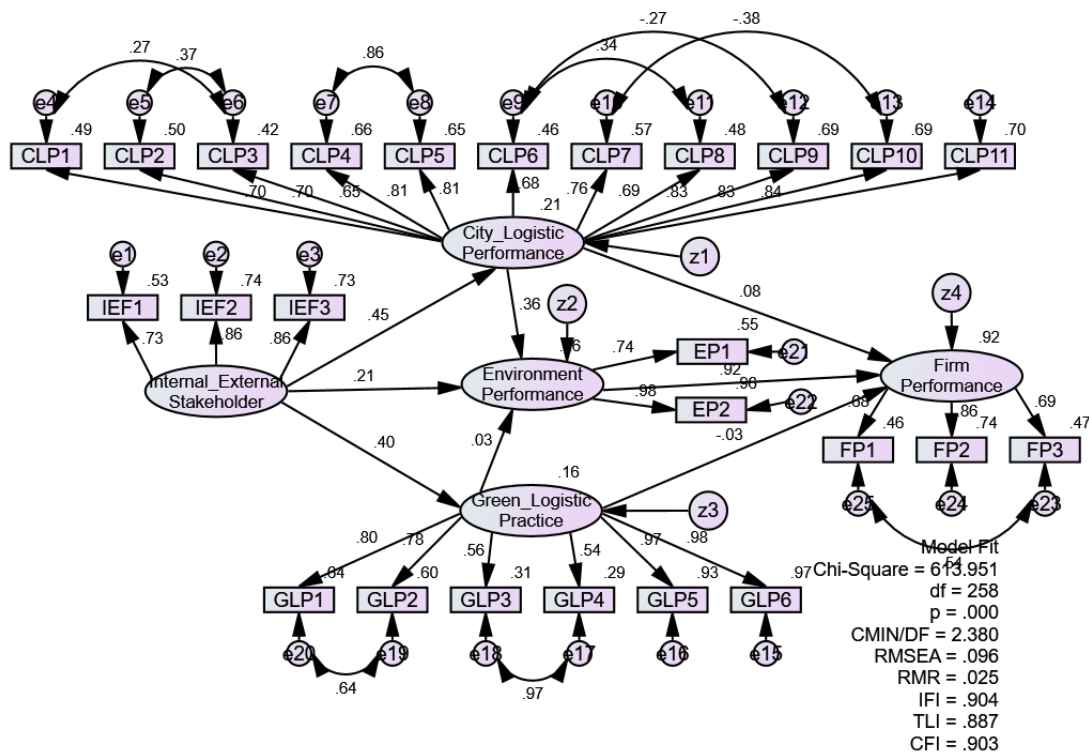
**Table 17**  
**Criteria Goodness of Fit (Gof)**

|   | X2      | df  | X2/df | RMSEA           | IFI    | CFI             | CMIN/DF |
|---|---------|-----|-------|-----------------|--------|-----------------|---------|
| <i>Fit Indices</i>                        | 613.951 | 258 | 2.379 | 0.096           | 0.904  | 0.903           | 2.380   |
| <i>Goodness of fit indices</i>            |         |     | ≤ 2   | 0.05 ≤ x ≤ 0.08 | ≥ 0.90 | ≥ 0.90          | < 2.00  |
| <i>Acceptable goodness of fit indices</i> |         |     | ≤ 3   | 0.05 ≤ x ≤ 0.1  | ≥ 0.90 | 0.95 ≤ x ≤ 0.97 | < 2.00  |

Source: *Standard Goodness of fit indices* (Schermelel-Engel et al., 2003)

From the results of the goodness of fit test in table 19, the parameter test by looking at the CMIN/DF is 2.38 (close to < 2.00) which can be concluded as marginal fit, and the RMSEA of 0.096 meets the requirements by being between 0.05 and 0.1). Criteria based on Incremental Fit Measures for IFI 0.904, CFI 0.903 meet the requirements by having a value above 0.90 so that it is concluded goodness of fit.

This research model can be declared worthy or goodness of fit when it is shown that one of the goodness of fit criteria is met (Siswono & Wardoyo, 1995). Produce a goodness of fit conclusion. So, the model test is said to be feasible to proceed to the next test, namely hypothesis testing.



**Figure 2:** Path diagram of standardized estimates of research model

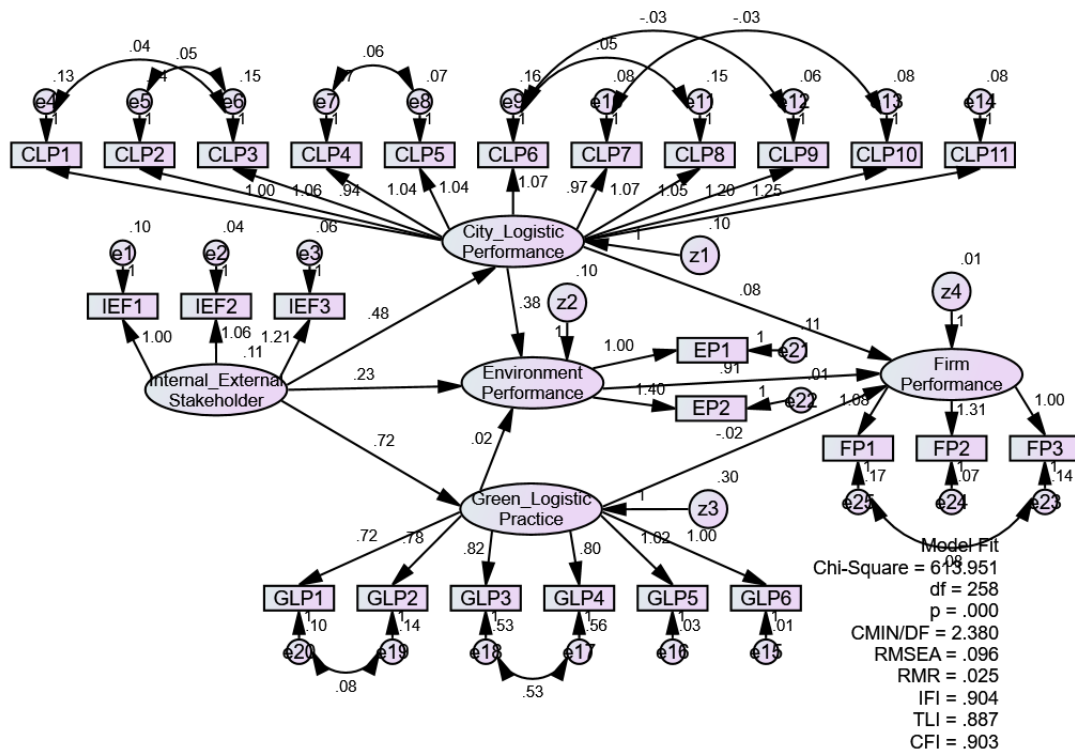


Figure 3: Path diagram of unstandardized estimates of research model

Research Results

Table 18  
 Hypothesis Testing Results

| Hypot hesis | Path                       |   | Estimat e                  | S.E.  | C.R.  | P     | Result |           |
|-------------|----------------------------|---|----------------------------|-------|-------|-------|--------|-----------|
| H1          | Stakeholders               | → | City Logistics Performance | 0.483 | 0.104 | 4.643 | ***    | Valid     |
| H2          | Stakeholders               | → | Environmental Performance  | 0.23  | 0.11  | 2.084 | 0.037  | Valid     |
| H3          | Stakeholders               | → | Green Logistics Practice   | 0.722 | 0.16  | 4.509 | ***    | Valid     |
| H4          | City Logistics Performance | → | Firm Performance           | 0.077 | 0.064 | 1.199 | 0.231  | Non-Valid |
| H5          | City Logistics Performance | → | Environmental Performance  | 0.377 | 0.1   | 3.763 | ***    | Valid     |
| H6          | Green Logistics Practice   | → | Environmental Performance  | 0.02  | 0.05  | 0.399 | 0.69   | Non-Valid |



|    |                           |   |                  |        |       |       |       |           |
|----|---------------------------|---|------------------|--------|-------|-------|-------|-----------|
| H7 | Green Logistics Practice  | → | Firm Performance | -0.017 | 0.031 | 0.569 | 0.569 | Non-Valid |
| H8 | Environmental Performance | → | Firm Performance | 0.905  | 0.115 | 7.872 | ***   | Valid     |

Source : Output SEM

## CONCLUSION AND SUGGESTION

### Conclusion

Based on the analysis of the research results in the previous chapter, the conclusions obtained to answer the formulation of the problem in this study are as follows:

1. Stakeholders are proven to have a positive influence on city logistics performance
2. Stakeholders are proven to have a positive influence on environmental performance
3. Stakeholders are proven to have a positive influence on green logistics practices.
4. The performance of city logistics proved to have no positive influence on the firm's performance. The results of data processing, obtained for this hypothesis has a P-value of 0.231 which causes the null hypothesis failed to be rejected. Practically, this proves that the city logistics performance in five shipping service companies in the city of Bogor does not have much impact on the performance of the company itself. The fact that their company continues to experience an increase in profitability and market share along with the development of the e-commerce industry. This is not in line with research conducted by (Taniguchi et al., 2003) which states that city logistics aims to optimize the logistics system in urban areas with the aim of reducing the cost of shipping goods.
5. City logistics performance is proven to have a positive influence on environmental performance
6. Green logistics practices proved to have no positive effect on environmental performance. This finding is quite interesting. The results of data processing, obtained for this hypothesis has a P-value of 0.69 which causes the null hypothesis failed to be rejected. Research by (Baah et al., 2021) stating that sustainable transportation, reverse logistics, sustainable packaging and distribution, contribute significantly to improving environmental reputation, as well as literature authored by (McKinnon et al., 2015), that green warehousing, route optimization and greener vehicles contribute to reducing greenhouse gases.
7. Green logistics practices proved not to have a positive influence on the firm's performance. The results of data processing, obtained for this hypothesis has a P-value of 0.569 which causes the null hypothesis failed to be rejected. This proves that the practice of green logistics in five shipping service companies in Bogor city does not have much impact on the performance of the firm itself. Research from (Mutie et al., 2020) stating the existence of a positive relationship between the implementation of green logistics practices and firm performance. However, these results are in line with research conducted by (Agyabeng-Mensah et al., 2021). The findings show that green logistics management practices have a significant negative influence on business performance. This shows that the adoption of green logistics management practice has

a significant influence on the marketing performance and profitability of manufacturing companies in Ghana. But negatively.

8. Environmental performance is proven to have a positive influence on firm performance.

### **Suggestion and implication**

Based on the conclusions, implications and limitations that have been described above, suggestions that can be taken for further research are

1. In future studies, the sample size may be increased, although the sample used for the study is sufficiently representative of the targeted population, it may affect the findings of the study because the sample size may affect the results of the study. Future research may consider using other techniques that may be able to increase the participation of respondents
2. The conceptual Model proposed in this study can be expanded by adding new variables, such as Social Sustainability, Sustainable information quality and Technology/Digitalization.
3. The application of green logistics practices can vary from small towns to large cities. Therefore, these differences can be considered in subsequent studies.
4. Data analysis and model testing future studies may adopt a covariance-based structural equation modeling approach to verify findings in other cities.
5. Local governments need make strategic decisions or provide related incentives to encourage the application of the green logistics concept to reduce greenhouse gas emissions, especially CO<sub>2</sub> in the Bogor city area. The government has issued regulations for exemption from motor vehicle taxes (PKB) and transfer fees for motorized vehicles (BBNKB), for renewable vehicles or electric vehicles. This is certainly expected to encourage ownership of electric motorcycles or electric cars. In particular, the five shipping service companies in the object of this research can take advantage of this policy to transform their fleet.
6. The government is also expected to provide incentives in the form of subsidies for environmentally friendly technologies such as alternative fuel vehicles or solar panel technology to be applied in the warehousing system of the five logistics companies in the object of this research.
7. For partners from the five logistics companies in the object of this research, it is hoped that it can provide encouragement for them to adopt green logistics practices, namely by providing incentives in the form of long-term contracts if they apply green logistics practices. For partners, they have added value to their company's value chain.
8. The five companies that are the object of this research are expected to encourage green logistics practices from within the company's management. The company's vision and mission are not only to make the company the best, reliable and best delivery service provider to serve the interests of customers optimally. But it must also put forward the principles of sustainability, especially the practice of green logistics, so as not to be disrupted by the competitive logistics industry, especially in West Java which has the largest national e-commerce market (Number of e-Commerce-In-Java-West-Most-National, n.d.) as many as 473.283 e-commerce businesses.

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