3. RESEARCH METHODOLOGY

3.1 Theoretical Model

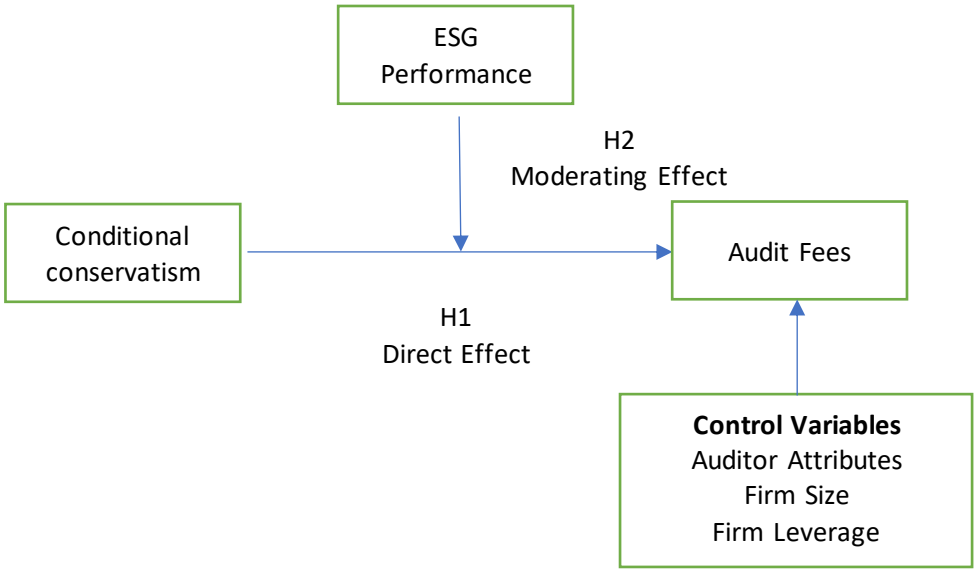

Figure 3. 1 Research Model

There are four variables within this research model, with conditional conservatism as the independent variable. Audit fees is the dependent variable, and ESG performance is the moderating variable. In addition, the author also used the control variable, which is the auditor attribute, firm size, and firm leverage. All those variables are meant to increase the accuracy of the research in regards to the correlation between conditional conservatism practices and the determination of audit fees. The regression model will be as follows:

$$AFi,t = \alpha - \beta 1CCi,t + \beta 2ESGPi,t + \beta 3FSi,t + \beta 4AAi,t + \beta 5FLi,t + \varepsilon i,t \quad (3.1)$$

Where:

$AF_{i,t}$: Audit Fees

α : Constant of the regression

$\beta 1 - \beta 5$: Regression coefficient of each variable

$CC_{i,t}$: Conditional conservatism of company i in t period

$ESGP_{i,t}$: ESG Performance of company i in t period

$FS_{i,t}$: Firm Size of company i in t period

$AA_{i,t}$: Auditor Attributes of company i in t period

$FL_{i,t}$: Firm Leverage of company i in t period

$\varepsilon_{i,t}$: Error of company i in t period

3.2 Variable Operationalization

As mentioned previously, there will be one independent variable, which is conditional conservatism (CC), to be researched. There is also one dependent variable, which is audit fees (AF). Moreover, there will also be one moderating variable, which is ESG performance (ESGP). There will also be three control variables, which are firm size, firm leverage, and auditor attributes. The definition and measurement of all variables will be discussed further in the following section.

3.2.1 Dependent Variable

The dependent variable is a variable that will be influenced by another variable, which is the independent variable in research (Leofaragusta Kurniawan et al., 2021). The dependent variable for this research is audit fees, which will be explained as follows: Audit fees are basically the sum of payment for the external auditor for the services they provide for their clients. In addition, the audit fees will be measured by the sum of audit fees in the logarithm function.

$$\text{Audit Fees} = \text{Log (Audit Fees)}$$

3.2.2 Independent Variable

An independent variable is the variable that influences the outcome of the dependent variable in research (Leofaragusta Kurniawan et al., 2021). Conditional conservatism will be the independent variable in this research. Conditional conservatism is basically making more conservative judgments in every decision in a business activity. The measurement for conditional conservatism will be using the modified Jones model (Kourdoumpalou, 2017).

$$TA_{i,t} = NI_{i,t} - OCF_{i,t} \quad (3.2)$$

$TA_{i,t}$ is the total accruals in t year, in addition $NI_{i,t}$ is net income in t year, and lastly $OCF_{i,t}$ is the operating cash flow in t year. Below is the regression model to calculate non-discretionary accruals of a company in a particular year.

$$NDAi,t = b0\left(\frac{1}{Ai,t-1}\right) + b1\left(\frac{\Delta REVi,t - \Delta RECi,t}{Ai,t-1}\right) + b2\left(\frac{PPEi,t}{Ai,t-1}\right) + ei,t \qquad (3.3)$$

$TACC_i$ is the total accruals of a company in a certain year. $A_{i,\,t-1}$, is the total assets of a company in the year before the base year. Delta revenue is basically the change in revenue generated by a particular company from the base year and a year before. Delta receivable is also the difference or change between the base year's receivable and a year before the base year's receivable. $PPE_{i,\,t-1}$, is the gross amount of property, plant, and equipment owned by a company in a certain year. In addition, b_0, b_1, and b_2 are the regression parameters that need to be estimated. For additional information, the total accruals of a company are equal to non-discretionary accruals plus discretionary accruals. Discretionary accrual is basically an abnormal accrual that occurs within a company's business processes; usually, it is intentionally done by the management of that particular company. On the other hand, non-discretionary accrual is the normal or legal accrual that is usually incurred within a company's business processes. Therefore, $e_{i,\,t}$ is basically the error, or it could also be said to be the residual of total accruals, which is discretionary accruals. Lastly, the result of discretionary accruals will be either 0 which reflect that the discretionary accruals is negative or 1 which reflect that the discretionary accruals is positive. If the result of discretionary accruals is positive it indicates that a company is implementing income increasing strategy and vice versa (Indriani & Pujiono, 2021).

The discretionary accruals formula can be found below.

$$DAi,t = \frac{TACCi,t}{Ai,t-1} - NDAi,t \qquad (3.4)$$

$DA_{i,t}$ is total discretionary accruals of company i in year t. The component to compute total discretionary accruals are total accruals of company i in year t and total non-discretionary accruals of company i in year t respectively. For additional information conditional conservatism is denoted by CC.

3.2.3 Moderating Variable

The moderating variable is basically a variable that is expected to have an effect on the relationship between the independent and dependent variables (Leofaragusta Kurniawan et al., 2021). The effect of the moderating variable could strengthen or weaken the relationship between the independent and dependent variables. ESG performance is the moderating variable in this research. In addition, ESG performance is how the company is engaged in ESG activities in its surroundings. ESG performance will be measured by the ESG score given by the Indonesia Stock Exchange.

3.2.4 Control Variable

The control variable is the factor that might influence the dependent variable but is held constant (Leofaragusta Kurniawan et al., 2021). By having a control variable, it enables the research to focus on the impact of the independent variable on the dependent variable. This research uses three control variables: firm size, firm leverage, and auditor attributes. By having control variables. For a more detailed explanation, please refer to the following table.

Table 3. 1 Control Variable

Control Variable	Definition	Measurement
Firm Size	Firm size measures the scale of the companies in the sample. It measured by natural logarithm. Ln (Total Assets)	Ratio
Firm Leverage	Firm leverage measures the capital structure of the companies in the sample. It measured by debt-to-equity ratio. D/E ratio = Total Debt / Total Equity	Ratio

Auditor Attributes	Auditor attributes show the type of external auditor for the companies in the sample. It measured by 0 for non-Big 4 and 1 for Big 4 companies.	0 and 1

3.3 Type and Source of Data

This research will be in the form of quantitative research. It is due to the nature of the chosen variables, which make use of secondary data. The data needed is collected from two secondary sources. The data retrieved is from the regulatory and financial statements of each chosen company. For each of the respective variables within this research, the data needed will be explained in the following paragraph.

For the dependent variable, which is the audit fee, the data will be in the form of audit fees paid to the public accounting firm that conducted the audit process for that company. Meanwhile, for the independent variable, which is conditional conservatism, the data will be in the form of certain things. The audit fees can be found in the financial statements of the company that is being audited. The data will be in the form of total assets, revenue, receivables, and also property, plant, and equipment in gross amount for the base year and a year before. The data for the independent variable can be retrieved from both Refinitiv and the financial statements of the companies. In addition to the moderating variable, which is ESG performance, the data needed will be in the form of ESG scores provided by IDX. Lastly, the control variables, which are auditor attribute and firm size and firm leverage, will be retrieved in the financial statements of the companies.

3.4 Instrument for Data Gathering

All the data needed to conduct this research will be in the form of quantitative data. The data will be obtained from the data collection process at Refinitiv and the financial statements of the chosen companies. In addition, the data will be collected from listed companies in Indonesia that operate in the consumer staples industries. If the related data is not available, the financial statements of the chosen companies would be a fine substitute. In addition, other

sources could be utilized as well, for instance, the Indonesia Stock Exchange (IDX) to collect the ESG scores of the listed companies.

Population refers to groups of individuals that usually have the same criteria and are chosen to be researched for a certain objective (Majid, 2018). The overall population that will be observed within this research will be listed manufacturing companies on the Indonesia Stock Exchange (IDX). In addition, this research consists of 115 manufacturing companies which operates in consumer staples industry between 2020 and 2023.

3.5 Population, Sample and Sampling Technique

Population refers to groups of individuals that usually have the same criteria and are chosen to be researched for a certain objective (Majid, 2018). The overall population that will be observed within this research will be listed manufacturing companies on the Indonesia Stock Exchange (IDX). In addition, this research consists of 115 manufacturing companies which operates in consumer staples industry between 2020 and 2023.

Meanwhile, the definition of a sample is a representative that is chosen from a particular population to gather the required information for the purpose of research or study (Majid, 2018). The sample technique that will be used within this research is non-probability sampling, or, to be more specific, purposive sampling. Purposive sampling basically involves the researcher's judgment in choosing the data for the research (Andrade, 2021). In order to get more specific and accurate sampling data, the author utilizes sampling criteria, which is:

1. The annual report is inaccessible.

Table 3. 2 Sampling Criteria.

Sampling Criteria	Number of Companies
Listed consumer staples companies in IDX.	117
(-) The annual report is inaccessible.	2
Companies that fulfill all the criteria	115
Number of observations years	4

Total observations	**460**

3.7 Unit Analysis

Unit analysis is basically the object of research that is being used by the researchers to collect the data they need (Kumar, 2018). Therefore, the unit analysis of this research will be the data collected from 115manufacturing listed companies. The coverage timeline of this research will be four consecutive years, starting from 2020 until 2023. Furthermore, by having the data collected from 115 manufacturing listed companies, this research will also include the assessment of the financial statements and the ESG performance in their correlation to the determination of audit fees.

3.8 Technique for Data Analysis

This sub-chapter will explain how the data within this research is processed. Before going into data processing, there are several data analysis techniques that are being used by the author. The techniques that are being used are the heteroskedasticity test, the multicollinearity test, the T-statistic test, and the F-statistic test. In addition, the author will utilize one of the statistical programs, GRETL, in the process of both processing and analyzing the data within this research.

3.8.1 Steps of Data Analysis

There will be several steps before going into the tests that are mentioned above; the steps beforehand are explained below:

1. Data Collection

The related data within this research is retrieved from Refinitiv and the financial statements that are being published. Other sources, such as the Indonesia Stock Exchange (IDX), might also be used to gather the data. IDX will be used when the data can not be found in Refinitiv and the published financial statements.

2. Independent and Dependent Variable Calculation

The data collected, as explained in the previous section, will need to be calculated and measured before proceeding to the next stage. The measurement that will be used has already been explained in sections 3.2.1 through 3.2.4.

3. Performance of Descriptive Statistic

In addition to the prior sub-section explanation, the collected data that had been gathered needed to go through a descriptive statistic as well. The descriptive statistic will be calculated for each independent and dependent variable. A descriptive statistic will include the calculation of the mean, median, minimum, and maximum values, with an additional standard deviation.

4. Conduct Classical Assumption Test

a. Heteroskedasticity Test

The heteroskedasticity test is conducted to determine whether or not the error in variance of the observations within this research is constant or not. Within this research, to determine whether heteroskedasticity or homoskedasticity is present, the method used will be the white testing method. The white testing method with a 5% significance level will show us whether heteroskedasticity or homoskedasticity is present within this research across the observations. Furthermore, if the result is more than 5%, the conclusion will be the data is free of the heteroskedasticity problem. It also applies the other way around, if the result is less than 5%, it means the data is classified as having heteroskedasticity problem and there is also homoskedasticity error.

b. Multicollinearity Test

The multicollinearity test is usually used in research that utilizes multiple linear regression in processing the data. A multicollinearity test is used to explain the correlation between the independent variables. Within the multicollinearity test, variance inflation factors (VIF) will be used. The result of the test should not exceed 10, if the result exceeds 10, then there is a high correlation among the variables (Shrestha, 2020).

5. Panel Specification Test

The author of this research also conducted panel specification tests to determine the most suitable regression method for the research data. The results of panel specification tests are explained in the following:

a. Fixed Effects Estimator

This test checks whether the research data is more suitable for either a pooled or fixed effect. It is indicated by the p-value. A P-value greater than 5% indicates the pooled effects. On the other hand, if the p-value is less than 5%, it indicates the research data is having a fixed effect. Therefore, the following hypothesis is formed:

H0 : Pooled model

H1 : Fixed model

b. Random Effects Estimator

i. Breusch-Pagan Test

The aim of Breusch-Pagan test is to decide whether the research data is suitable for pooled or random model. A P-value greater than 5% indicates the research data is having pooled model. On the other hand, if the p-value is less than 5%, it indicates the research data is having random model. Therefore, the following hypothesis is formed:

H0 : Random model

H1 : Pooled model

ii. Hausman Test

The Hausman test make sure whether the research data is suitable of random or fixed model. A P-value greater than 5% indicates the random model. On the other hand, if the p-value is less than 5%, it indicates the fixed model. Therefore, the following hypothesis is formed:

H0 : Random model

H1 : Fixed model

6. Model Testing

a. T-Statistic Test

The T-statistic test is mainly used to determine the impact of each independent variable on its relationship with the dependent variable within the

research. Perhaps the result from the T-statistic test of analyzing the sample chosen will be representative of the entire population. Hypotheses for the T-statistic test is usually stated the same as in the following example:

$H_0 : \beta 1 = 0$

$H_1 : \beta 1 \neq 0$

The result of the T-statistic test will be that the null hypotheses (H0) will be rejected if the resulted P-value is less than 0.1, that is, at the 90% confidence level. If such a case happened, then there would be a significant correlation between the independent and dependent variables.

b. F-Statistic Test

The F-statistic test is used to determine whether the regression model is significant or not. The F-statistic test is slightly different from the T-statistic test. The difference is in the assessment of the significance of the variable. While the T-statistic test focuses on the significance of the individual variable, the F-statistic test focuses on the overall significance of the model.

$H_0 : \beta 1 = \beta 2 = \beta 3 = ... = \beta n = 0$

H_1 : Atleast one of the $\beta 1 \neq 0$

The result of the F-statistic test will be the rejection of H0 if the result of the P-value is at the 90% confidence level and is less than 0.05. It implies that the model is significant. In contrast, if the P-value is at the 90% confidence level and is more than 0.05, H0 is accepted. It implies that the model is insignificant and that there is a minimal impact of the independent variable on the dependent variable.

7. Hypotheses Test

Another test that the author will conduct within this research will be the hypotheses test. The hypotheses test is conducted to decide whether the hypotheses devised within this research are accepted or not.

8. Analysis and Conclusion

To conclude, all subsequent tests that have been conducted must have the conclusion part at the end of them. In addition, this research will also provide further justification for the test results, with reference to the base journal of this research.