3. RESEARCH METHODOLOGY

3.1 Theoretical Model

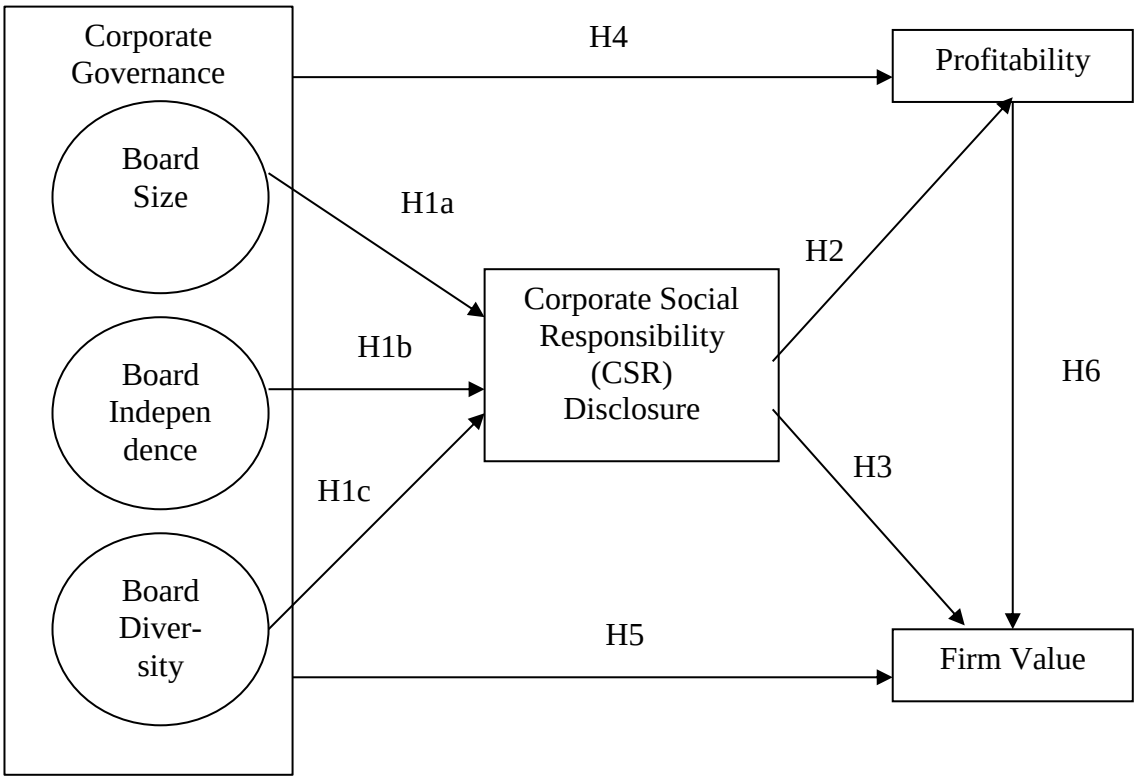

Figure 3.1. The simplified model of correlation between CG, CSR Disclosure, Profitability & Firm Value

The theoretical model used in this study is described as figure 3.1 above. This figure explains the relationship between Corporate Governance, CSR Disclosure, Profitability and Firm Value. Corporate Governance elements will focus on examines the Board Size (BS), Board Independence (BI), and Women on Boards (WB). This research will focus on the impact of Corporate Governance and CSR disclosure as variable intervening towards profitability and firm value. Besides, this research will also examine the impact of Corporate Governance towards profitability and firm value. Therefore, as this paper use multi variables, multivariate analysis which is structural equation modeling (SEM) analysis will be used. SEM used to test the corporation of the independent variable which is corporate governance that will be impactful to the change of the dependent

variable, showed as profitability and firm value, with CSR disclosure as the intervening variable.

3.2 Variable Operationalization and Measurement Scale

For this paper, there are 2 variables that will be exercised such as dependent variable and independent variable. There are several method applied to measure the scale, which are nominal, ordinal, interval and ratio. Nominal scales used to differentiate variables either it belongs to group or uses on quantitative information, for instance when it comes to gender, religion and preferences. Ordinal scale usually measure quantitative information such non-numeric data such as satisfaction. Ordinal scale gives 1 to 5 to state the level of agreement (strongly agree, agree, neutral, disagree, strongly disagree). On the other hand, interval scale assesses quantitative entry which differences can be exactly distinguished between the values. For example, this apply to scale of temperature such Celsius or Fahrenheit and also time. As for the last, ratio scale similar with interval scale as it tells the exact values between units but ratio scales have an absolute zero. This scale applies on measurement of height and weight.

3.2.1 Independent Variable

Independent variable is a variable that stands solely and influences other variables that use as the basis of the research result. Independent variable used in this research is Corporate Governance. Characteristic that influences CG such as Board Size (BS), Board Independence and Women on Board (WB) will be used to measure the independent variable.

Table 3.1 Independent Operational Variables

Variables(s)	Definition	Measurement Scale
Board Size (BS)	It represents the total member of Board of Commissioner in the organization	Nominal
Board Independence (BI)	It represents the total number of independent commissioner over total	Ratio

	directors in Board of Board of Commissioner in the organization	
Women on Boards	It represents the percentage of women commissioner in Board of Commissioner in the organization	Ratio

Source: Author's Compilation

3.2.2 Dependent Variables

Dependent variable is a variable that affected by independent variable. Here in this research, the dependent variable is profitability and firm value. Profitability measures using accounting measures such Return on Asset (ROA) while firm value will be measured using Tobin's Q measurement. Thus, there will be 2 dependent variables, ROA and Tobin's Q.

Table 3.2 Dependent Operational Variables

Variables(s)	**Definition**	**Measurement Scale**
Return on Equity (ROE)	It represents the percentage of company's net income over average total equity $ROA = \frac{Net\ Income}{Av.Equity}$	Ratio
Tobin's Q	It represents the rupiah value of the company's total market value of equity and its debt divided with the total asset $Tobin's\ Q = \frac{Market\ Value\ of\ Equity + Debt}{Total\ Assets}$	Ratio

Source: Author's Compilation

3.2.3 Intervening Variable

An intervening variable or in other term mediating variable, is a variable that explains how dependent variable affects or influences the independent variables. In this paper, the intervening variable is CSR disclosure. CSR disclosure is the information revealed in the company's annual report in CSR

section or sustainability report. CSR disclosure index is the common disclosure of an organization used regarding the CSR disclosure in what they were doing. The CSR disclosure index will be used GRI 3.1 standard checklist that contains 79 items. If the company discloses any CSR information included in the checklist, in their annual or sustainability report, then it awarded = "1". However, if company doesn't disclose any item that included in the checklist, then it awarded = "0".

Table 3.3 Intervening Operational Variables

Variables(s)	Definition	Measurement Scale
CSR Disclosure Index (CSDRI)	It represents the percentage of company's CSR disclosure item disclosed divided by the maximum item disclosed based on GRI 3.1 standard checklist $CSRDI = \frac{Number\ of\ items\ disclosed}{Maximum\ items\ disclosed = 84}$	Ratio

Source: Author's Compilation

3.3 Type and Source Data

For the purpose of this research's analysis, the type of the data used in this research is both quantitative and qualitative data. Quantitative data is mostly data in form of numerical scale, amount that express certain quantity, whereas qualitative data is data that mostly expressed in descriptive manner.

Source of data in this paper is mostly used secondary data. According to BPP Learning Media (2016), secondary data is data which already been collected elsewhere such as websites, journals, or books for particular purpose and which can be utilized for the survey being conducted. This paper retrieved secondary data from information gained in financial statement stated in company's annual report or simply taken from sustainability report which will be received from company's official website or www.idx.co.id, or any relevant information that can be gained from reliable sources for instance Bloomberg and other sources. Further description of the data source and type of data will be stated in table below.

Table 3.4 Types and Sources of Data

Data	Types of Data	Source of Data

Board Size (BS)	Quantitative	Annual Report
Board Independence (BI)	Quantitative	Annual Report
Women on Boards (WB)	Quantitative	Annual Report
CSRD Index (CSRDI)	Quantitative/Qualitative	Annual Report, Reliable websites
Return on Equity (ROE)	Quantitative	Annual Report/Bloomberg
Tobin's Q ratio	Quantitative	Annual Report/Bloomberg

Source: Author's Compilation

3.4 Instrument for Gathering Data

The method used for collecting data in this paper is documentation method. Documentation method is the method of acquiring data that available in the form of documents that indirect towards the subject of the research. This paper used secondary data in whole process. Secondary data in this paper is acquired from annual or sustainability report of the company. In addition, to be a well-prepared research paper, some data is also collected from reliable websites such as global reporting websites that provided scoring of CSR disclosure.

3.5 Population

Population is the group of people or objects of interest to a data collector (BPP Learning Media, 2016). In this research study, the population that is being used is State-Ownership Enterprise (SOE) that listed in Indonesia Stock exchange (www.idx.com) in every category which are energy, telecommunication, construction, bank, pharmacy, mining, transportation, steel, and building materials. SOE listed companies that consistently published their annual report and available in period 2011-2016 are being examined in this study. Specifically, SOE listed company that have conducted their CSR activities according to partnership and environmental program (PKBL) according to PER-09/MBU/07/2015.

3.6 Sample and Sampling Technique

According to BPP Learning Media (2016), a sample is a selection from the population. Sampling Technique divided into two, probability and non-probability sampling. The technique used in deriving the sample is Purposive Sampling Technique. By using this, there are several pre-determined criteria that need to be fulfilled to come into qualified sample. In this research, the criteria require to be satisfied are as follow:

1. SOE that are listed in Indonesia Stock Exchange in the year of 2011 until 2017
2. SOE listed that are conducting PKBL program as listed in the government's websites (www.infopkbl.bumn.go.id)
3. SOE that have published their annual report consequently from 2011 until 2017
4. SOE that have sufficient information regarding financial information and CSR information (PKBL program) by stating that the program have been conducted to fulfill the responsibility according to PER-09/MBU/07/2015 which disclosed in their annual or sustainability reports

Table 3.5 Population and Sample

Sampling Criteria	**No. of Companies**
State-Ownership Companies (SOC) that are listed in Indonesia Stock Exchange	20
SOC listed companies which did not consistently publish their annual reports from 2011 to 2017	(0)
SOC listed companies which have not been conducted the program to fulfill the responsibility according to PER-09/MBU/07/2015	(0)
SOC listed companies which did not have complete data needed for the research	(3)
Number of companies which fulfill the criteria	17
Total sample used in this research (17x7)	119

Source: Author's Compilation

3.7 Data Analysis Technique

In the purpose of analyzing the impact of corporate governance towards profitability and firm value with CSR disclosure as the intervening variable, this study will use structural equation modeling (SEM). This will be conducted by utilizing WarpPLS software that use partial least square or PLS as part of SEM. This technique is a multivariate statistic technieque to compare multi dependent variables and multi independent variables (Solimun et al., 2017). WarpPLS provides two sub models, both outer and inner model. Outer model explains relation between latent variables and their indicators whereas inner model explains the relation between independent variables and dependent latent variables. Following test on analyzing the research will be further discuss on below.

3.7.1 Outer Model Evaluation

Outer model or measurement model discuss the way on how assign characteristics of each indicators from latent variable data which may be either reflective or formative indicator model. This model evaluation examines the validity and reliability of the latent variables. Validity test describes as two test which explains in details as follow:

1. Convergent Validity

   This test assesses the correlation coefficient of both latent constructs and indicator score. In order to accomplish this convergent validity test, result must be shown that it is related to each other. This will be achieved if factor loading value is between 0.5 – 0.6 and Hair et al. (2010) mentioned rule of thumb that good loading factor value if it is greater than 0.3 (Solimun et al., 2017).

2. Discriminant Validity

   This validity test brings value of cross loading factors that are useful to determine if discriminant validity is adequate or not. This can be achieved by comparing the loading value of an indicator with latent variable and resulted that loading value of each indicator is greater than adding value of other latent variable. On the same time, discriminant validity can be

fulfilled as well if the square root of the AVE is larger than other coefficient correlations.

There are two test to measure the reliability of the each variables, which discuss in details as below:

1. Composite Reliability

   Reliability test is to assess the accuracy of each measurement items with the internal consistency. It is consider to be high if the composite reliability result is bigger than 0.8. The composite reliability has the formula:

$$\rho c = \frac{(\sum \lambda i)^2}{(\sum \lambda i)^2 + \sum i \sigma^2 (ei)}$$

2. Cronbach's Alpha

   To strengthen the result of reliability test, cronbach's alpha can be used. Here is the formula of cronbach's alpha:

$$r11 = (\frac{n}{n-1})(1 - \frac{\sum_{j=1}^{k} s_j^2}{S_t^2})$$

   The result of cronbach's alpha will be range from 0 to 1 in various categories. The criteria is confirmed if the alpha value is bigger than 0.6. Details on each range described further in table below.

Table 3.6 Cronbach's Alpha coefficient range

Coefficient range	**Remarks**
r11 > 0.9	Very High Reliability (Very Good)
r11 > 0.8	High Reliability (Good)
r11 > 0.7	High Reliability (Good)
r11 > 0.6	Medium Reliability (Average)
r11 > 0.5	Low Reliability (Bad)

r11 > 0.4	Low Reliability (Bad)

Source: (Solimun et al., 2017)

3.7.2 Inner Model Evaluation

On the condition after testing the validity and reliability, the research model should have goodness of fit. Goodness of fit is the measurement to assess the model fit, relationship between the latent variables. The details information on the fit criteria can bee seen further on table below.

Table 3.7 Model Fit and Quality Indices

No.	Model Fit and Quality Indices	Fit Criteria
1.	Average Path Coefficient (APC)	P < 0.05
2.	Average R-Squared (ARS)	P < 0.05
3.	Average Adjusted R-Squared (AARS)	P < 0.05
4.	Average Block VIF (AVIF)	Acceptable if ≤ 5, ideally ≤ 3.3
5.	Average Full Collinearity VIF (AFVIF)	Acceptable if ≤ 5, ideally ≤ 3.3
6.	Tenenhaus GoF (GoF)	Small ≥ 0.1, medium ≥ 0.25, large ≥ 0.36
7.	Sympson's Paradox Ratio (SPR)	Acceptable if ≥ 0.7, ideally = 1
8.	R-Squared Contribution Ratio (RSCR)	Acceptable if ≥ 0.9, ideally = 1
9.	Statistical Suppression Ratio (SSR)	Acceptable if ≥ 0.7
10.	Nonlinear Bivariate Casuality Direction Ratio (NLBCDR)	Acceptable if ≥ 0.7

Source: Solimun et al. (2017