CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The previous chapter discussed empirical studies and theoretical aspects about performance measures and shareholder’s value creation. This chapter outlines and describes the research design and methodology using in confirming the hypotheses. It also introduces the data sources and the specific regression models that link different performance measures and the dependent variable CSV. This chapter is structured as follows: Section 3.2 with empirical econometric analysis followed by the types of research design in Section 3.3. Section 3.4 highlights research methodology that includes Subsection 3.4.1 explaining sampling and data collection, 3.4.2 investigating data sources, Subsection 3.4.3 highlights reliability and validity of the data, and finally Section 3.4.4, 3.4.5, 3.4.6 and 3.4.7 provides measurements of traditional measures, economic measures, dividend payout ratio and created shareholder’s value. Section 3.5 explains conceptual framework whereas; Section 3.6 highlights hypothesis development. In addition, Section 3.7 provides panel data analysis followed with subsections explaining pooled regression model, fixed effect model and random effect model. Section 3.8 evidenced statistical methods used in the research. Finally, concluding remarks are provided at the end of the chapter.
3.2 EMPIRICAL ECONOMETRIC ANALYSIS

Econometrics is based upon the development of statistical methods for estimating economic relationships, testing economic theories, and evaluating and implementing government and business policy. The most common application of econometrics is the forecasting. Econometrics has evolved as a separate discipline from mathematical statistics because the former focuses on the problems inherent in collecting and analyzing non-experimental economic data. Non-experimental data are not accumulated through controlled experiments on individuals, firms, or segments of the economy. Non-experimental data are sometimes called observational data, or retrospective data, to emphasize the fact that the researcher is a passive collector of the data (Wooldridge, 2012).

An empirical analysis uses data to test a theory or to estimate a relationship emphasizing that the first step in any empirical analysis is the careful formulation of the question of interest. The question might deal with testing a certain aspect of an economic theory, or it might pertain to testing the effects of a government policy. Under general assumptions, an equation describing the shareholder’s value as a function of various performance measurement factors can be represented as:

\[ y = f(x_1 + x_2 + x_3 + x_4 + x_5 + x_6 + x_7 + x_8 + x_9), \]  

(3.1)

where,

- \( y \) = created shareholder’s value
- \( x_1 \) = Earnings per share
- \( x_2 \) = Economic value added
- \( x_3 \) = Dividend payout ratio
- \( x_4 \) = Market value added
- \( x_5 \) = Return on assets
In this study, an economic model consisting of mathematical equation that describes various relationships and describing a vast array of behaviors was described. After specifying economic model, there is a need to turn the equation 3.1 to an econometric model. Then such economic model of created shareholder’s value was specified with a particular econometric model:

\[
CSV = \beta_0 + \beta_1 EPS + \beta_2 EVA + \beta_3 DPR + \beta_4 MVA + \beta_5 ROA + \beta_6 ROE + \beta_7 ROCE + \beta_8 NOPAT + \mu
\]

where,

CSV = Created shareholder’s value
EPS = Earnings per share
EVA = Economic value added
DPR = Dividend payout ratio
MVA = Market value added
ROA = Return on assets
ROE = Return on Equity
ROCE = Return on capital employed
NOPAT = Net operating profit after tax

The dependent variable here is the created shareholder’s value (CSV) for firm i in period t. The explanatory variables in this model are: earnings per share (EPS), economic value added (EVA), dividend payout ratio (DPR), market value added (MVA), return on assets (ROA), return on equity (ROE), return on capital employed (ROCE) and net operating profit after tax (NOPAT). Positive and signif-