

Article

Performance of gender diversity on board of directors: The case of Indonesia

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Abstract: This study further explores women's role in top management in Indonesia, where men still dominate that position. This study underlines the role of women's boards of commissioners in producing better financial performance in the specific sectors, manufacturing and service sectors, where the power of women to lead these sectors is more optimal. The sample is selected from the Indonesia Stock Exchange for the period 2009–2018. The final sample is 780 observations. This study applies panel data, which is more robust when controlling heterogeneity. Data panel regression is applied to analyze data. This study finds that gender diversity harms market-based performance, while from accounting-based measures, gender diversity has a significant positive effect. This study is applied explicitly in the manufacturing and services industrial sectors; therefore, carefully generalizing the results is necessary. Research in other specific sectors is very open to obtaining specific results in various industries, including developing countries other than Indonesia. The market has not trusted the role of women in top management; there is still a kind of 'hidden distrust' about the capabilities of women in running the top leadership captain. The market needs more substantial evidence to believe in women's performance on the board of directors. Therefore, it is necessary to provide wider opportunities for women to sit on the board of commissioners, as much as men have.

Keywords: gender diversity; board of directors; market-based; accounting-based; performance

JEL Classification: for example, O11; M23; L13

1. Introduction

Gender diversity is not socially correct but the best thing in business (Grant Thornton, 2019). Many studies show a strong relationship between diversity at the leadership level and business performance. In many developing countries, including Indonesia, gender diversity still becomes an interesting issue. The belief that men are more suited to lead than women still becomes ordinary credence among people in Indonesia (Kusumastuti, 2007). On the other hand, women have some characteristics that are superior to men; for example, women have a very high level of caution and tend to avoid risk more thoroughly than men (Kusumastuti et al., 2007). Women also tend to be calmer and more careful in making decisions, resulting in a higher and safer return. In the pros and cons of the existence of women in top management (Kyaw, 2015), the contribution of women to achieve superior performance becomes a crucial issue. According to Remery et al. (2014), men and women are the same regarding their capacity to lead family business.

In some cases, women have more outstanding achievements in management performance than men (Mahedao et al., 2012). From the developed countries, Smith

et al. (2005) found that the positive role of women in top management depends on their qualifications. Women have suitable characteristics and competence to manage a firm effectively, as Benkraiem et al. (2017) prove. Further, Kyaw et al. (2015) found that the existence of women on board promotes corporate social performance. However, the results do not support the demand to promote equal opportunity between women and men in top management positions, especially in developing countries.

Whether women in top management perform better than men in Indonesia is still questionable. The previous studies on this issue are minimal, and their findings still need clarification. In his study, Darmadi (2013) found that women in top positions negatively impact firm performance. This is supported by Sawitri et al. (2016) and Tarigan et al. (2018), who consistently discovered the same finding. Other research said that women's presence in top management has a positive and significant influence on the firm's financial performance; they argued that a woman has a higher commitment level and tend to be democratic with their leadership style (Pasaribu et al., 2019; Noviera et al., 2018; Triana and Asri, 2017; Syamsudin et al., 2017). However, other research showed that gender diversity did not significantly affect the firm's financial performance (Arquisola et al., 2018; Kusumastuti et al., 2007). However, it is too early to conclude that top management women are insignificant. This implies that further exploring the role of women in top management in Indonesia, where men are still dominating that position, is critical for some reasons. First, diversity is fundamental to businesses that fit into the future. A Boston Consulting Group (BCG) study from 171 companies in Germany, Switzerland and Austria shows a clear relationship between team diversity, income and innovation. Second, in Indonesia, the progress of gender equalization is quite encouraging. The current study shows that Indonesia is leading in having women leaders compared to other Asia countries. Women hold around 46% per cent of management roles. This study also uncovers that 40 per cent of 424 public listed on the Indonesia Stock Exchange (IDX) have women as their board commissioners' members. Now, many firms, especially family-owned companies, have begun to offer women similar opportunities to get positions in top management (Ramadani et al., 2017). Therefore, the performance of gender in top management is engaging to investigate.

This study provides some contributions. First, unlike prior studies in Indonesia that just used cross-sectional data (Sawitri et al., 2016; Syamsudin et al., 2017; Darmadi, 2013), which contains many weaknesses and has the potential to bias the results, this research uses panel data, which makes it possible to model dynamics and change, overcome unobserved variability and increase efficiency estimate and more robust when controlling heterogeneity (Hafsi and Turgut, 2013; Bear et al., 2010; Adams and Ferreira, 2009; Carter et al., 2003; Erhardt et al., 2003). Second, this study focuses on the manufacturing and service sectors to improve the prior findings. Prior results suggested that the type of industry has an essential role in defining the relationship between a female director and the firm's performance (Kirsch, 2018); gender diversity on the board of directors is less effective in primary industry (raw materials) than secondary industry (manufacture) and tertiary (service) industry, and a woman director that works on the consumer goods industry will bring a positive result for the company (Martín-Ugedo and Minguéz-Vera, 2014; Chapple and Humphrey, 2014). Moreover, multi-sector research tends to ignore the unique

characteristics of each sector, starting from market structure, regulations, and competitive dynamics. Therefore, combining all sectors to be tested together in the context of gender diversity, as was done in previous research in Indonesia (Darmadi, 2013; Noviera et al., 2018; Pudjiastuti et al., 2007), will lead to misleading conclusions. Finally, this study distinguishes performance into accounting-based and market-based financial performance to avoid biased results. Accounting-based financial performance involves a more actual measurement of financial performance on the role of each party, especially the board of directors, in achieving financial performance.

Meanwhile, market-based performance measurement involves the market perception of the company's existence as a whole and is not solely determined by the achievement of financial performance. Market assessments of the role of gender diversity in achieving current and future performance will shape market-based performance. In an Indonesian environment that implicitly still believes that a leader must be a man, it becomes a big challenge for female leaders because it is difficult to change that perception.

2. Theoretical background

2.1. The view on women leaders in the local context

The view is that 'think manager-think male' is a global phenomenon (Schein et al., 1996); their studies found that most of their participants reveal some characteristics of successful managers are in men, not women. The paradigm that a leader should be a man, not a woman, becomes a barrier for women to penetrate a career as a top organization leader; in their study on Indonesian women, barriers in achieving a career as a professional public accountant. Lindawati and Smark (2015) stated that Indonesia's culture, especially Javanese culture, considered it inappropriate for women to have the same emphasis in their careers as their former male counterparts. Women are the followers; therefore, they should follow men. Further, their study also exposed that there are three barriers for women to have the same career as men; the first is social barriers to how women behave properly; secondly, women are expected to do their domestic roles as well as their professional roles and so far there is still no appropriate role models. Félix and David (2019) showed the possibilities of similarities between men and women in acquiring social capital early in their careers, but once they achieved senior positions, the accumulation of their social capital became different.

Indonesia has experienced a series of stages toward women's leadership. First, Indonesian women's participation in politics and economic development has begun, especially since the first Indonesian Women's Congress in 1928 (Wright and Tellei, 1993). Moreover, according to Wright and Tellei (1993), Indonesia's most renowned gender equality fighter, Kartini, has inspired several high-class women in Indonesia to fight for equal opportunity between men and women in all fields, including education and employment. In subsequent developments, traditional Indonesian women, especially those from ethnic Javanese, became active in the labour force and had a dominant role in financial decision-making in the family (Wright and Tellei, 1993).

In the modern era, the family business is open to giving the same possibility to women as successors within the family business; it means that women are considered

the next generation of business leaders (Ramadani et al., 2017). The success of women in some prominent positions in companies, especially family-owned companies, supports that recently, women get a bigger chance than their previous generation. Nowadays, many Indonesian women have proven their ability to lead their family businesses successfully. Some prominent names in Indonesia family business, such as Mooryati Sudibjo (PT. Mustika Ratu), Martha Tilaar (PT. Martha Tilaar), Noni Sri Aryani (Blue Bird Group) and Svida Alisyahbana (Femina Group) are some of the success stories of women in business (Ramadani et al., 2017).

Conversely, equality between men and women has not been achieved yet (Félix and David, 2019; Rodríguez-Ariza et al., 2017). One of the reasons why the percentage of women in top management positions is low is because there is a stereotype that a man is more dependable than a woman in a top management position. That stereotype can lead to a company's preference for assigning men to the board of directors (Gerdeman, 2019).

2.2. Gender diversity in the board of directors and agency theory

Gender diversity is people's representation from various genders, which usually refers to the balanced ratio between men and women (Setó-Pamies, 2013). Gender diversity also means the equality of man and woman ratio that strongly connects with corporate governance as a set of rules on managing and controlling a firm. Gender diversity in the board of directors shapes independent behaviour to produce better manager oversight (Carter et al., 2003; Noviera and Adhariani, 2018). By giving women more opportunities in top management, the independence of boards will improve (Bjuggren et al., 2018). Diversity in an organization can result in problem-solving, improving leadership effectiveness, and efficiently tightening relations (Noviera and Adhariani, 2018; Robinson and Dechant, 1997). The satisfying gender representative on the board of directors increases innovation and creativity (Campbell and Minguez-Vera, 2008). A study showed that adequate gender representatives on the board of directors enable better handling of organizational conflicts because women are known to ease conflict situations (Earley and Mosakowski, 2000), emphasizing harmony and trust more.

According to agency theory, the presence of women on the board of directors is considered an outsider who can perform a monitoring role better than that of men (Kirsch, 2018). It is assumed that women will assume a monitoring role because they are more likely to be "outsiders", and because of inherent gender differences, they tend to be more diligent than men. The involvement of a female board of directors will also positively influence CEO power (Ahern and Dittmar, 2011; Pasaribu et al., 2019).

Bear et al. (2010) stated that agency theory also provides a theoretical framework for how diversity in the board of directors can affect performance. Agency theory provides the basis for the function of the board of directors to oversee management on behalf of shareholders (Fama and Jensen, 1983; Eisenhardt, 1989). Hillman and Dalziel (2003) state that to carry out its monitoring function, the board of directors requires the right combination of experience and skills to evaluate management and assess business strategy. Carter et al. (2003) suggest that a more diverse board of directors can be a better oversight because the diversity of the board of directors

increases independence. Carter et al. (2010) also argue that the relationship between gender diversity on the board of directors and company performance depends on the corporate governance mechanism. This is also in line with the proposition of Gul et al. (2011) that the involvement of women on the board of directors will improve poor corporate governance because a diverse membership of the board of directors will increase corporate accountability. Therefore, increasing gender diversity can be a means to improve monitoring and management control. Therefore, agency theory can be applied to identify the effect of gender diversity on the board of directors on financial performance.

2.3. Market-based performance of gender diversity on the board of directors

Carter et al. (2003) found that companies with two or more women on their board of directors have high firm value. By using the sample of U.S. Fortune 500 companies, Carter et al. (2003) found that companies with at least one woman on the board of directors have a significantly higher Tobin's Q. This result is also supported by some previous studies that showed a positive relationship between gender diversity in the board of directors and Tobin's Q (Gordini and Rancatti, 2017; Campbell and Minguez-Vera, 2007). The higher the gender diversity, the better the company's market performance. However, Hambrick and Mason (1984) stated that heterogeneity could cause top management to spend much time on debates; thus, their company must react slowly to market changes, especially in a competitive environment. In addition, diversity could cause more conflicts; thus, even if they make good decisions, the companies still have to experience adverse effects, which is a slower decision-making process (Syamsudin, 2017).

Some researchers failed to identify a significant relationship between the presence of gender diversity, especially women's presence on the board of directors and firm value (Marinova et al., 2010); Campbell and Minguez-Vera (2008) and Rose (2007). Using a small sample from Indonesian manufacturing companies, Kusumastuti et al. (2007) and Darmadi (2013) found that women's presence on the board of directors does not associate with Tobin's Q. The results of these studies indicate that the Indonesian market implicitly still shows uncertainty about the capabilities of women on the board. The presence of women on the board has yet to be seen as a value creation for the company. The general view that leaders are men is firmly rooted in the Indonesian market.

However, with the flow of openness and promotion of gender equality everywhere, the role of women on the board will be viewed positively by the market. Providing opportunities for gender performance on the board shows that the company respects the principle of equality. This principle is an essential part of good corporate governance so that gender diversity in the board shows a signal of increasing good governance, which will be responded to positively by the market. Based on the explanation, the hypothesis is as follows:

H1. The board's gender diversity will increase the market-based performance.

2.4. Accounting-based performance of gender diversity in the board of directors

Gender diversity in the board of directors promotes broader perspectives in decision-making, higher creativities and innovations, and broader marketing to various customers (Robinson and Dechant, 1997; Cox, 1991; Cox and Blake, 1991; Darmadi, 2013). Gender diversity is believed to benefit the organization because women are considered to have a ‘feeling’ cognitive style (Darmadi, 2013; Krishnan and Park, 2005). This type of cognitive style stresses organizations’ values and harmony (Darmadi, 2013), pushes various information and resources (Darmadi, 2013; Earley and Mosakowski, 2000), resolves conflicts, and has a more democratic leadership style (Darmadi, 2013; Eagly and Johnson, 1990).

A diverse board of directors will have a better understanding of their market. The presence of women on the board of directors will give a new perspective and valuable inputs to the top management (Anderson et al., 2011), create a better decision on problem-solving (Hillman and Dalziel, 2003), increase creativity and innovation (Robinson and Dechant, 1997), and improve the access of information (Beckman and Haunschild, 2002). The performance of an organization’s management will be better if the board of directors has heterogeneous members because they can balance each other in competency and credibility (Syamsudin et al., 2017). Women’s presence in the top management will help companies make better decisions to increase firm performance in terms of profit or net income.

Previous research has revealed that women in top management are more likely to be successful in secondary rather than primary industries (Kirsch, 2018). Women’s skills in managing conflict and understanding customer needs are superior to men’s; women tend to listen, motivate, give support, and push the team to have better teamwork (Syamsudin et al., 2017). Thus, a higher gender diversity on the board of directors will lead to more effective decision-making (Syamsudin et al., 2017; Pudjiastuti and Mardiyah, 2007). This capability is needed primarily in the service and manufacturing industries, including the consumer goods industry, which requires more intense interaction with customers or clients. In this industrial setting, gender diversity, where the more even involvement of women in top leadership, will support better financial performance. The appointment of a female director improves a firm’s performance (Bear et al., 2010). Therefore, the hypothesis of this research is proposed as follows:

H2. Board gender diversity will improve the financial performance measure by return on assets.

3. Research objective, methodology and data

3.1. Sample and data

This research focused on the firm listed on Indonesia’s Stock Exchange. This research’s initial sample consists of 687 listed firms on Indonesia’s Stock Exchange for over ten years (2009–2018). The data collection period spanned ten years, starting in 2009. In that year, the ideas and concepts of gender equality began to come to the attention of the Indonesian government through the National Development Planning

Agency (Bappenas), which encouraged gender equality and women's empowerment. The data are collected from the annual report available at Indonesia's Stock Exchange, the company's website and Bloomberg. The research was conducted from 2009–2018. With ten years of research, it is expected to have data diversity and reduce bias. Therefore, a sample is selected based on the following criteria: first, listed in the Indonesia Stock Exchange for 2009–2018, not from the primary industrial sectors, and published audited annual financial reporting. After reducing the initial sample with the above-specified criteria, this research's final number of samples is 78 firms or 780 observations from 2009–2018. The total number of companies in these two sectors that went public until 2009 was 103 companies; from this sample, 78 companies met the criteria or around 76% of the total sample.

3.2. Research variables and operationalization

3.2.1. Dependent variable

Tobins' Q

The dependent variable in this research is market-based performance, measured by Tobin's Q. Tobin's Q measures the firm's performance in terms of potential market value, which reflects market expectation on future income. This measurement is also a good proxy for the firm's competitive advantages (Campbell and Minguez-Vera, 2008). Tobin's Q is a market-based measurement focused on future performance expectations (Campbell and Minguez-Vera, 2008; Demsetz and Villalonga, 2001). Tobin's Q has been commonly used as a financial performance measurement in some previous research (Tarigan, 2018; Gordini and Rancati, 2017; Syamsudin et al., 2017; etc.).

$$Tobin's\ Q = \frac{Total\ liabilities + Market\ value\ of\ Equity}{Total\ Assets} \quad (1)$$

Return on assets (ROA)

Return on assets (ROA) is an accounting-based performance measurement. Previous studies have proven that gender diversity is associated with financial Performance (Adams and Ferreira, 2009; Jackling and Johl, 2009; Bhagat and Bolton, 2008). ROA is calculated from the ratio of net income to total assets at the end of the period.

3.2.2. Independent variable

In this research, gender diversity in the board of directors is measured with the Gender Diversity Index. This index is commonly used in empirical research (Humbert and Guenther, 2017). Two kinds of Gender Diversity Index usually apply: the Blau Index and the Shannon Index. This study applies the Shannon Index because this index is more sensitive to the little differences in gender composition than the Blau Index (Humbert and Guenther, 2017; Lee-Kuen et al., 2017; Martin-Ugedo and Minguez-Vera, 2014; etc.). Recent studies have also applied the Shannon Index ((Issa and Fang, 2019; Lee-Kuen et al., 2017; Campbell and Minguez-Vera, 2008). Shannon Index is measured as:

$$H = - \sum_{i=1}^R P_i \times x \ln P_i \quad (2)$$

where P_i is a percentage of the board of directors' members in each category (man and woman) and is the total number of the board of directors (Campbell and Minguez-Vera, 2008), while \ln is the natural logarithm, and R is the total number of categories.

3.3.3. Control variables

This study uses several control variables, including family ownership, firm size, growth and industry (Margolis and Walsh, 2001). The measurement of control variables is as follows:

Family Ownership

In this research, we based on the proportion of share ownership owned by a family to describe the control of a family-owned firm (Chu, 2011; Shyu, 2011; Andres, 2008; etc.). The firm will be classified as family-owned when the family owns at least 5% of its share. A minimum ownership of 5% is considered sufficient to exercise control. Family ownership is identified if a family member holds 5 per cent or more of the firm's share, and at the very least, one family member is on the board of directors. Family ownership is measured with dummy variables with a score of 1 for firms where the family share ownership is within a minimum of 5 per cent. In contrast, a score of 0 is given for non-family ownership firms.

Firm Size

Firm size reflects the size of a firm based on market capitalization. The size of a firm can be shown from the total assets, sales amount, total sales average and assets average. The size of a firm is usually valued by how significant the firm's assets are. The firm's size is measured from the firm's total assets, which will be transformed into a natural logarithm (Chadwick and Dawson, 2018; Dezsó and Ross, 2012). Firm Size (SIZE) will be calculated using the log natural of total assets.

Growth

This study measures growth using sales growth. Sales growth describes the company's ability to generate net income and promise returns to shareholders.

Board size

The larger board size will reduce more information asymmetry than the small board size; therefore, the board size is measured using the number of boards in the board scaled by the number supervised (Loukil et al., 2019).

3.3. Analysis model

The relationships specified in the research hypothesis are stated in **Figure 1** below.

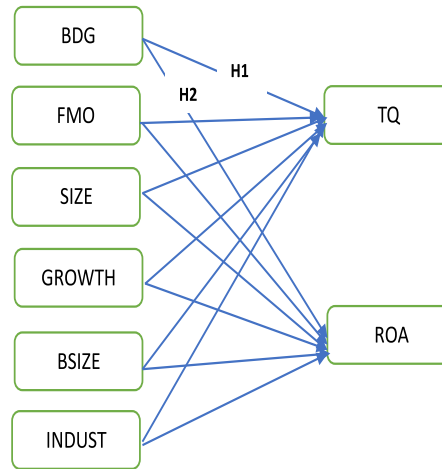


Figure 1. Relationship between research variables.

$$TQ_{i,t} = \alpha_0 + \alpha_1 BGD_{i,t-1} + \alpha_2 FMO_{i,t-1} + \alpha_3 FMO \times BGD_{i,t-1} + \alpha_4 SIZE_{i,t-1} + \alpha_5 GROWTH_{i,t-1} + \alpha_6 BSIZE_{i,t-1} + \alpha_7 INDUST_{i,t-1} \varepsilon_{i,t} \quad (3)$$

$$ROA_{i,t} = \beta_0 + \beta_1 BGD_{i,t-1} + \beta_2 FMO_{i,t-1} + \beta_3 FMO \times BGD_{i,t-1} + \beta_4 SIZE_{i,t-1} + \beta_5 GROWTH_{i,t-1} + \beta_6 BSIZE_{i,t-1} + \beta_7 INDUST_{i,t-1} \varepsilon_{i,t} \quad (4)$$

where:

$TQ_{i,t}$: Tobin's Q of i firms in t time;

$ROA_{i,t}$: Return of assets of i firms in t time;

$BGD_{i,t-1}$: Gender diversity in the board of directors of i firms in $t-1$ time;

$FMO_{i,t-1}$: Family ownership of i firms in t time;

$GROWTH_{i,t-1}$: Sales growth of i firms in t time;

$SIZE_{i,t-1}$: Natural logarithm from the book value of total assets of firms i in t time;

$BSIZE_{i,t-1}$: Number of the board of directors i firms in t time;

$INDUST_{i,t-1}$: Classification of the firm by industry;

$\varepsilon_{i,t}$: composite error consisting of unobserved, time constant effect (α_i), and the idiosyncratic error (u_{it}).

4. Results and discussion

4.1. Descriptive analysis

This research was conducted in two industrial sectors based on several previous studies (Kirsch, 2018; Martín-Ugedo and Minguez-Vera, 2014; Chapple and Humphrey, 2014); these sectors are more suitable if there are women on the board of commissioners. The two industrial sectors are the manufacturing and service sectors, including the financial and trade sectors. **Table 1** below shows significant differences in the mean figures for ROA and Board Gender Diversity (BGD) for the manufacturing sector compared to the service sector. Meanwhile, the average T.Q. did not differ in the two sectors. In terms of ownership, manufacturing companies are more owned by families than service companies.

The family ownership variable is not the main variable in this study. However, because the measurement of this variable is nominal, it is necessary to describe the profile of the research variables in the two sample groups, especially for the main variables of this research, such as BGD, ROA and T.Q. Based on the sample group of

family and non-family companies, it shows that the average value of ROA, T.Q. and BGD is significantly different between the two groups (**Table 2**). The BGD of family companies is higher than that of non-family companies. Companies with family ownership do provide considerable opportunities for women to sit on the board (Ramadani et al., 2017). The average size of the board of commissioners (BSIZE) also differs significantly between family and non-family firms. Family companies have a relatively smaller board size than non-family companies. This is because, in family companies, mutual trust has generally been built because of family ties, so there is no need for more excellent supervision as in non-family-owned companies. Company size and growth are the same between family and non-family companies. Generally, the average performance of non-family firms is higher than that of non-family firms.

Table 1. Statistic descriptive by industry.

	Manufacturing			Services			Mean Diff	Sig	
	Mean	Std. Dev.	Std. Error	Mean	Std. Dev.	Std. Error			
ROA	2.416	8.539	0.604	4.783	6.573	0.310	-2.367	0.000	***
TQ	1.257	0.639	0.045	1.335	1.274	0.060	-0.078	0.410	
BGD	0.148	0.242	0.017	0.288	0.285	0.013	-0.140	0.000	***
FMO	0.735	0.442	0.031	0.610	0.488	0.023	0.125	0.002	***
FMOxBGD	0.095	0.213	0.015	0.204	0.278	0.013	-0.108	0.000	***
SIZE	29.44	2.129	0.151	29.37	2.036	0.096	0.073	0.677	
GROWTH	0.061	0.664	0.047	0.112	0.437	0.021	-0.051	0.249	
BSIZE	1.470	0.422	0.030	1.466	0.382	0.018	0.005	0.892	

Table 2. Descriptive statistic by family ownership.

	FMO			Non-FMO			Mean Diff	Sig	
	Mean	Std. Dev.	Std. Error	Mean	Std. Deviation	Std. Error			
ROA	4.762	7.939	0.371	2.152	6.573	0.310	2.610	0.000	***
TQ	1.400	1.269	0.059	3.441	16.953	0.930	-2.041	0.011	***
BGD	0.266	0.288	0.013	0.173	0.246	0.013	0.093	0.000	***
SIZE	29.50	1.632	0.076	29.52	2.690	0.147	-0.025	0.870	
GROWTH	0.095	0.504	0.024	0.101	0.476	0.026	-0.006	0.857	
BSIZE	1.448	0.350	0.016	1.501	0.430	0.024	-0.025	0.055	*

4.2. Hypothesis testing

Before testing the entire sample, the hypothesis is tested for each industrial sector. The results of model 1 (**Table 3**) testing, where the dependent variable is T.Q., show that BGD is negative and significant in the manufacturing industry. In contrast, in the service industry, BGD does not affect T.Q. Therefore, the existence of BGD in the service sector has no impact on market-based performance. In the manufacturing industry, gender diversity, where the board’s composition is not only dominated by one gender, received a negative response. The market doubts the ability of women on the board. Some researchers failed to identify a significant relationship between

gender diversity, especially women’s presence on the board of directors and firm value (Marinova et al., 2010; Campbell and Minguez-Vera, 2008); Rose, 2007). Kusumastuti et al. (2007) and Darmadi (2013) found that women’s presence on the board of directors is not associated with Tobin’s Q. Their study used a small sample in Indonesia.

From several control variables, companies with family ownership in manufacturing responded negatively to the market. Meanwhile, family ownership does not affect market-based performance in the service sector. However, FMO successfully moderated the effect of BGD on T.Q. in the manufacturing sector. When the BGD is in a company with family ownership, it gets a positive response from investors and increases T.Q. SIZE, GROWTH and BSIZE vary their effect on market-based performance.

Table 3. Per industry (Model 1^a).

	Manufacturing				Services			
	Coef	t value	p-value	Sig	Coef	t value	p-value	Sig
(Constant)	-56.490	-2.184	0.030	**	3.060	5.315	0.000	***
BGD	-0.395	-3.405	0.001	***	-0.075	-1.053	0.293	
FMO	-0.347	-4.278	0.000	***	0.107	1.625	0.105	
FMOBGD	0.283	2.074	0.039	**	-0.073	-0.877	0.381	
SIZE	0.172	2.304	0.022	**	-0.236	-3.447	0.001	***
GROWTH	0.055	0.872	0.384		-0.089	-1.830	0.068	*
BSIZE	0.110	1.577	0.116		0.180	2.489	0.013	***
R ²	0.153				0.048			
Adj R ²	0.130				0.034			
F	6.702			***	3.419			***

^aDependent Variable Tobin’s Q.

***, **, * = significance level at 1%, 5% and 10%.

Testing model 2 (**Table 4**), where the dependent variable is accounting-based performance as measured using ROA, shows different results from the previous one. The test results show that gender diversity on the board (BGD) positively and significantly affects ROA in the manufacturing sector. In the services sector, although not significant, it shows a positive relationship. FMO, GROWTH, and BSIZE positively and significantly affect both industrial sectors. On the other hand, the size of the company (SIZE) has a negative effect; this shows that the larger the size of the company, the more complex and bureaucratic, the less agile to move and burden the company’s costs, which in turn will reduce the company’s net income.

Table 4. Per industry 9 (Model 2^a).

	Manufacturing				Services			
	Coef	t value	p-value	Sig	Coef	t value	p-value	Sig
(Constant)	9.824	0.778	0.437		25.777	5.288	0.000	***
BGD	0.435	3.949	0.000	***	0.076	1.135	0.257	
FMO	0.356	4.615	0.000	***	0.237	3.829	0.000	***
FMOBGD	-0.429	-3.361	0.001	***	-0.108	-1.370	0.171	
SIZE	-0.125	-1.809	0.072	*	-0.343	-5.300	0.000	***
GROWTH	0.398	6.876	0.000	***	0.247	5.361	0.000	***
BSIZE	0.224	3.497	0.001	***	0.246	3.608	0.000	***
R ²	0.303				0.152			
Adj R ²	0.283				0.139			
F	15.44			***	12.006			***

^aDependent Variable ROA.

***, **, * = significance level at 1%, 5% and 10%.

The test results for the entire sample group (**Table 5**) show that the gender diversity on the board (BGD) negatively and significantly affects T.Q., a market-based performance measure with a coefficient value of -0.206 and p -value <0.01 ; thus, H1 is rejected. This result is predictable from testing per industrial sector, where there is a negative and significant direction of BGD towards T.Q. in the manufacturing sector. This finding differs from previous findings in Indonesia (Kusumastuti et al., 2007; Darmadi, 2013; Syamsudin, 2017), where BGD was not associated with T.Q. These statistical results imply that the market assesses that the presence of women in top management tends to be counter-productive; the more gender diversity in top management, the lower the company's market assessment. This finding indirectly shows the market's distrust of female leaders because they still believe male leadership is superior to women's. In addition, FMO has a negative and significant effect on T.Q. However, FMO managed to moderate the effect of BGD on T.Q. BGD in companies with family ownership is more appreciated by the market. BSIZE, the size of the board of commissioners, has a significant positive effect on T.Q., while INDUST has a significant negative effect.

In contrast to the results of testing hypothesis 1, hypothesis 2 shows that BGD has a positive and significant effect on ROA, indicated by ROA coefficient of 0.122 with a p -value <0.05 . Thus, hypothesis 2 is accepted. This finding confirms that women on boards characterized by gender diversity enhance oversight mechanisms within companies and encourage management to perform better. Internally, family ownership increases ROA. Family-owned companies have a high spirit to perform better to maintain the continuity of family prosperity (Shyu, 2011; Andres, 2008).

Table 5. All sample (Model 1 and Model 2).

	All sample Model 1 ^a				All sample Model 2 ^b			
	Coef	t value	p-value	Sig	Coef	t value	p-value	Sig
(Constant)	5.428	0.922	0.357		11.589	2.811	0.005	***
BGD	-0.206	-3.342	0.001	***	0.122	2.038	0.042	**
FMO	-0.145	-3.177	0.002	***	0.218	4.929	0.000	***
FMOBGD	0.180	2.552	0.011	***	-0.134	-1.947	0.052	**
SIZE	0.015	0.355	0.723		-0.180	-4.326	0.000	***
GROWTH	0.044	1.234	0.218		0.191	5.538	0.000	***
BSIZE	0.075	1.748	0.081	*	0.117	2.813	0.005	***
INDUST	-0.108	-3.0054	0.003	***	0.141	4.029	0.000	***
R ²	0.036				0.110			
Adj R ²	0.027				0.102			
F	4.183			***	13.668			***

^aDependent Variable Tobins'Q.

^bDependent Variable ROA.

***, **, * = significance level at 1%, 5% and 10%.

4.3. Discussion

This research shows that gender diversity in the board of directors, measured by the Shannon Index, positively and significantly impacts ROA. Furthermore, the higher the proportion of women on the board of directors, the higher the firm's ROA. The positive impact of women's presence toward ROA is aligned with the previous research from Ionescu et al. (2018), Kilic and Kuzey (2016), Fidanoski et al. (2014) and Campbell and Minguez-Vera (2008). This finding implies that gender diversity in the board of directors provides a broader perspective on decision-making, higher creativity, innovation, and successful marketing for various customers.

Gender diversity benefits organizations because women are considered to put more care into the organization's values and harmony, encouraging the spread of information and resources, conflict resolution, and more democratic leadership. Women leaders spend more time training and developing the employees in the organization than men; this leads to an enormous development effort in general and especially for women, who can improve the motivation and learning process of a whole organization, including the minority members, to do the leadership role. A woman is also considered more challenging because they must face obstacles before taking a position in the men-dominated hierarchy. They can give more benefits in terms of psychology, increased interaction with colleagues, and a respected position in the business environment. A woman leader with the relational leadership approach can increase the overall team focus in their relationship with internal and external stakeholders, which has been proven beneficial in today's business environment. The finding proves that increasing women's presence on the board of directors improves a firm's financial performance with better decision-making and organizational motivation and support.

The results of this study contribute to existing results, especially following up on the suggestions of several previous studies that gender diversity is less effective in

primary industries but practical in secondary and tertiary industries such as manufacturing and services (Martín-Ugedo and Minguez-Vera, 2014; Chapple and Humphrey, 2014; Kirsch, 2018). Using the manufacturing and service sectors as a sample, the findings of this study support that the presence of women on the board in both sectors has been shown to increase ROA.

However, hypothesis 1 contradicts hypothesis 2 above, where gender diversity on the board is responded to negatively by the market. The market has yet to trust the role of women in top management; there is still a kind of ‘hidden distrust’ about the capabilities of women in running the top leadership captain. Amid the increasingly popular gender equality euphoria, the market is still not convinced of the capability of women leaders. This result confirms previous research that the market in Indonesia has yet to provide an equal place for women leaders; therefore, the presence of women leaders in top management has been responded negatively. These results are consistent with the results of some previous studies, among others, Bennouri et al. (2018), Tarigan et al. (2018), Darmadi (2013), etc.

There was a view that the trigger for male leadership success was having high abilities, while female leadership success was only due to luck (Kusumastuti et al., 2007). However, Crawford (2006) revealed that failure in women occurs because of unlucky factors that cause incompetence and failure in men (Crawford, 2006; Kusumastuti et al., 2007). So that, the market underestimates the presence of women on the board of commissioners because women are perceived as unable to lead companies as well as men.

5. Conclusion

The results of this research improve the results of previous research in Indonesia, which generally used cross-section data and applied it to multi-sectors. This study takes two sectors of the manufacturing and service industries, which are based on several previous studies that these sectors are more suitable if there are women in the top management. Using accounting-based performance measures, which are more actual than market perceptions, proves that board gender diversity has a positive and significant effect on ROA. This finding is exciting because the presence of women on the board contributes to the achievement of better performance.

The further result proves that board gender diversity has a significant negative effect on market performance as measured by Tobin’s Q. The market still doubts the ability of women to lead companies compared to men. The strong belief in Indonesian society that a leader must be a man is challenging for women. Even though the market still underestimates and doubts the ability of women on the board of directors, empirical facts support the importance of board gender diversity, which will impact achieving better financial performance.

It should be noted that the effectiveness of women on the board is limited only to secondary or tertiary industries, not primary industries. Therefore, the results of this study cannot be generalized to industries other than the two sectors, namely manufacturing and services. However, because this research is still being carried out on companies in Indonesia, it can be carried out in various other countries to ensure consistency. Further research is suggested to consider women’s qualifications in the

firm's performance to get more complete results regarding what qualifications must be possessed by women who are successful in leading companies and being part of top management.

Another limitation of this research is that it needs to consider the characteristics of women who sit in top management, such as women's expertise and experience, and additional demographics such as age and positions held. Aspects of expertise, experience, age and position in top management can provide a broader explanation regarding the role of women in top management on company performance. Future research could follow up on this issue to obtain more specific results.

As a developing country, Indonesia did not have formal rules that ruled gender diversity and women's presence on the board of directors. This kind of thing gives the listed firms in Indonesia the freedom to arrange their boards compared to firms in developed countries such as Norway, Finland, France, and England, which have rules about gender diversity on the board of directors. This research also gives some recommendations for the government that Indonesia's market share regulator can apply a specific law or rule to push women's presence on the board of directors, just like other countries, such as the U.E., Malaysia, and Brazil, do.

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