

“Is gender diversity good for the quality of accruals in Indonesia?”

Robiyanto Robiyanto 



AUTHORS

Andreas Lako 

Angelina Ika Rahutami

ARTICLE INFO

Robiyanto Robiyanto, Andreas Lako and Angelina Ika Rahutami (2022). Is gender diversity good for the quality of accruals in Indonesia?. *Problems and Perspectives in Management*, 20(1), 80-92. doi:[10.21511/ppm.20\(1\).2022.08](https://doi.org/10.21511/ppm.20(1).2022.08)

DOI

[http://dx.doi.org/10.21511/ppm.20\(1\).2022.08](http://dx.doi.org/10.21511/ppm.20(1).2022.08)

RELEASED ON

Tuesday, 25 January 2022

RECEIVED ON

Tuesday, 13 July 2021

ACCEPTED ON

Thursday, 20 January 2022

LICENSE



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

JOURNAL

"Problems and Perspectives in Management"

ISSN PRINT

1727-7051

ISSN ONLINE

1810-5467

PUBLISHER

LLC "Consulting Publishing Company "Business Perspectives"

FOUNDER

LLC "Consulting Publishing Company "Business Perspectives"



NUMBER OF REFERENCES

41



NUMBER OF FIGURES

1



NUMBER OF TABLES

8

© The author(s) 2022. This publication is an open access article.



BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 13th of July, 2021

Accepted on: 20th of January, 2022

Published on: 25th of January, 2022

© Robiyanto Robiyanto, Andreas Lako,
Angelina Ika Rahutami, 2022

Robiyanto Robiyanto, Dr., Associate
Professor, Department of Management,
Faculty of Economics and Business,
Satya Wacana Christian University,
Indonesia. (Corresponding author)

Andreas Lako, Dr., Professor, Head of
Doctoral Program in Environmental
Science, Faculty of Environmental
Science and Technology, Soegijapranata
Catholic University, Indonesia.

Angelina Ika Rahutami, Ph.D.,
Associate Professor, Department of
Management, Faculty of Economics
and Business, Soegijapranata Catholic
University, Indonesia.



This is an Open Access article,
distributed under the terms of the
[Creative Commons Attribution 4.0
International license](https://creativecommons.org/licenses/by/4.0/), which permits
unrestricted re-use, distribution, and
reproduction in any medium, provided
the original work is properly cited.

Conflict of interest statement:

Author(s) reported no conflict of interest

Robiyanto Robiyanto (Indonesia), **Andreas Lako** (Indonesia),
Angelina Ika Rahutami (Indonesia)

IS GENDER DIVERSITY GOOD FOR THE QUALITY OF ACCRUALS IN INDONESIA?

Abstract

There is no regulation in emerging markets, i.e. Indonesia imposing the gender diversity quota. Therefore, based on the different characteristics and attributes between developed and emerging markets, this study aims to analyze the impact of the boardroom's gender diversity on the quality of accruals, i.e. earnings in big Indonesian firms. This study used a sample of 100 big manufacturing firms in Indonesia. Moreover, this paper utilized a widely used proxy for the quality of earnings and the boardroom's gender diversity. Data panel with fixed effect method was used to compute the quality of accruals while path analysis was utilized for hypotheses testing. Furthermore, the results showed evidence that the boardroom's gender diversity indirectly influenced the quality of accruals through cash flow variability. However, the presence of female directors is not a significant inducement for managers to report better quality of earnings. The managerial implication of this study is that the boardroom's gender diversity is good for the emerging markets since it supports better accounting accruals indirectly. Future studies should incorporate many industries and consider the potential of endogeneity, which has not been tackled in this paper.

Keywords

cash flow, corporate finance, panel data regression,
earning management, quality of earning, Indonesia
stock exchange

JEL Classification

G30, J16

INTRODUCTION

Business nowadays facing the rapid dynamics, these dynamics coming from both internal and external factors. Along the complexity of the business environment and technology advancement, there is an increased awareness of the boardroom's gender diversity (Jizi & Nehme, 2017). Boardroom's gender diversity is seen as a governance tool that can improve the quality of governance, transparency, monitoring, and protection of the rights of shareholders. Women's representation is seen as a signal of governance quality. Gender diversity in the board of directors can promote new talents and provide access to important parties from the external environment. the boardroom's gender diversity improves transparency and monitoring of management activities, therefore the quality of decision-making is also increasing (Herring, 2017; Isidro & Sobral, 2015; Triana & Asri, 2017). Hence, it is logic if the boardroom's gender diversity has positive relationship with earnings quality. Some studies in developed market found the positive effect between earnings quality and the boardroom's gender diversity (Jadiyappa et al., 2019; Saona et al., 2019).

However, different setting occurs in Indonesia. There are no regulated quotas in Indonesia regarding the boardroom's gender diversity. In other words, there is no corporate governance recommendation for appointing female executives to companies listed on the Indonesia Stock Exchange (IDX). It is highly likely that the implementation of

IFRS, high-quality accounting standards, promotes cross-country investment (Krismiaji et al., 2019). Concisely, there is no regulation in Indonesia imposing the boardroom's gender diversity quota under the Indonesia Stock Exchange's (IDX) rules and the Financial Services Authority. So it is important to scrutinize this issue in Indonesia's setting.

1. LITERATURE REVIEW, AIM, AND HYPOTHESES

Saona et al. (2019) suggested that the number of female directors has increased especially in European nations. Their results confirmed the advantages of having a balanced gender in directors' positions. In fact, the presence of female directors can reduce earnings management. In addition, it was also shown that the advantages of having female directors, such as better firm performance and better earnings management, are more evident in countries that impose quota restrictions on the composition of companies' boards. Similarly, Pasaribu (2017) showed the importance of female directors on firm performance especially for smaller firms in the UK. According to resources dependence theory (RDT), which is proposed by Pfeffer and Salancik (1978), the board of directors is functioned to communicate to external parties especially in dealing with resource dependence; hence, the relationship of boardroom's diversity and firm performance is to make minimal environmental dependences.

Hillman et al. (2009) stated that the board's diversity shows commitment to minorities and it may add legitimacy to companies. It sends a signal that companies support equal opportunities. Another related theory is agency theory, popularized by Jensen and Meckling (1976). It states the importance of the relationship and contract between principal and agent. Principal delegates tasks to agents including the decision-making. In public firms, shareholders are equal to the principal and directors are equal to agents. Agency theory assumes that agents may be motivated to fulfilling their own needs and as a result, conflicts may occur. Directors may make selfish decisions to maximize their wealth and this may contradict shareholders' interests (Handriani & Robiyanto, 2018, 2019). Kanter (1977) stated that representation must consider not only presence or absence. It means that the way people interact with each other who have different attributes (in this case, men and women) is proportional representation.

Another related theory is critical mass theory. According to critical mass theory, there are four groups of various proportional representations. First, the uniform type has primarily one category of gender or homogeneous or in this case either male or female. Second, the skewed type consists of a maximum of 20 percent of token members. Tokens are considered symbols of their category, in this context – female directors. A tilted type is when women are considered to be a minority. It consists of roughly 20 to 40 percent of female directors. Finally, the group type is a balanced representation with respect to gender or it comprises 40 to 60 percent of female directors (Joecks et al., 2013). Moreover, Strydom et al. (2017) analyzed male and female cooperation, with an emphasis on female directors, and found that there was a skewed category in Australia.

Therefore, based on the different characteristics and attributes between developed and emerging markets, this study is encouraged to investigate the boardroom's diversity and quality of earnings on emerging markets. This paper contributes to the current literature from different perspectives. First, as previously mentioned, Rahayu et al. (2019) found that there is no direct influence between the boardroom's gender diversity and accruals quality in Indonesia. This study introduces a mediator variable that indirectly connects the boardroom's gender diversity and accruals quality. Second, to support the robustness of the results, this study used several boardroom's diversity proxies that are not yet widely implemented in the literature especially in the emerging markets. Additionally, this study also applies another widely used accruals quality proxy as a sensitivity test.

Pasaribu (2017) also stated that the UK's big listed firms, FTSE100 and FTSE250 companies, are more scrutinized than the small listed firms. Therefore, female directors only significantly affect small firm performance. Further, Rahayu et al. (2019) showed that boardroom diversity cannot directly impact accrual-based earnings in Indonesia. In

addition, Pasaribu (2017) argued that big listed firms, which are the proxy of well-regulated firms, are having over-monitoring issues. As a result, female directors cannot increase performance. Therefore, big firms may appoint female directors to fulfill quotas rather than economic reasons.

Hartono et al. (2018) stated that earnings management in real activities such as giving price discounts and offering soft credit terms through cash flow may increase the firm performance. In addition, Nugroho et al. (2019) showed that cash flow from operation (CFO) variability is related to better accruals quality. Therefore, it indicates that less CFO variability, the better accrual-based earnings. Moreover, they suggested that Islamic-obedient companies in Indonesia are under close examination from rule-makers. Therefore, they are induced to provide better accounting reports. Similar circumstances have been found in Malaysia (Sabrun et al., 2018). In other words, companies that are under scrutiny from rule makers may provide better CFO variability hence reducing earnings management manipulation. Based on previous findings, it is highly likely that the relationship between CFO variability and earnings management is straightforward.

Moreover, generally, women are avoiding risk compared to men. In an emerging market such as Indonesia, Widyawati et al. (2018) showed that female directors were avoiding firm risk-taking particularly when women were positioned as directors rather than commissioners. In addition, female directors are traditionally conservative and risk-averse (Charness & Gneezy, 2012; Widyawati et al., 2018; Endrikat et al., 2021). Further, the presence of females on boards can give diverse business perspectives, better stakeholder relationships, and brings better corporate governance practice (Singhathep & Pholphirul, 2015; Křečková et al., 2016; Obigbemi et al., 2016; Mittal, 2018; Saona et al., 2019; Lu et al., 2020).

The relation between boardroom diversity and cash flow was investigated by Fauzi et al. (2017). Using accounting-based ratios such as free cash flow as a risk factor, they argued that women's attributes such as high academic qualification can contribute to the firms' financial stability. Further, it is likely that women are democratic and are

more likely to delegate decision-making (Strydom et al., 2017). This leadership approach can create more comfortable and convenient work environments that may improve the firm performance and reduce firm risks.

The aim of this paper is to examine the boardroom's gender diversity and quality of accruals, i.e. earnings in Indonesia by incorporating a mediator that indirectly connects the boardroom's gender diversity to the quality of earnings in Indonesia. Based on this aim, several hypotheses were developed:

H_1 : *There is no direct influence between the boardroom's gender diversity and accruals quality.*

H_2 : *CFO variability has a positive relationship with accruals quality.*

H_3 : *Boardroom's gender diversity has a negative relationship with CFO variability.*

H_4 : *CFO variability mediates the boardroom's gender diversity and accruals quality.*

2. METHODS

2.1. Sample and data

This study followed the previous study in the sample selection process (Dwiharti & Adhariani, 2018; Nugroho et al., 2019; Tarigan et al., 2018), which consists of several steps revealed in Table 1.

Further, this study implemented a purposive sampling method. The first requirement of the purposive sampling was public companies listed in Indonesia Stock Exchange from 2012 until at least 2017. Secondly, the sample was manufacturing companies. The main reason for using the manufacturing firms was that there was a different approach to obtaining net income across different industries. Therefore, only one specific industry was taken. Consequently, the results could be compared among firms.

In addition, the data were hand-collected from the Indonesian Capital Market Directory (ICMD)

Table 1. Sample calculation

Source: IDX, processed.

| Description | | Companies |
|---|--------------|----------------------|
| Manufacturing firms listed in Indonesia Stock Exchange 2012–2017 | | 141 |
| Firms with financial statements denominated in non–local currency | | (27) |
| Newly IPO, delisted companies in 2012–2017 | | (14) |
| The final sample of listed manufacturing firms | | 100 |
| Firm-years observation (5 x 100) | | 500 |
| Industry Sectors | No. of firms | Percentage of sample |
| Wood industries | 2 | 2% |
| Tobacco manufacturers | 4 | 4% |
| Textile, garment | 10 | 10% |
| Pulp and paper | 3 | 3% |
| Plastics and packaging | 8 | 8% |
| Pharmaceuticals | 8 | 8% |
| Metal and allied products | 11 | 11% |
| Houseware | 3 | 3% |
| Footwear | 2 | 2% |
| Food and beverages | 12 | 12% |
| Cosmetics and household | 4 | 4% |
| Chemicals | 5 | 5% |
| Ceramics, glass, porcelain | 6 | 6% |
| Cement | 3 | 3% |
| Cable | 5 | 5% |
| Automotive and components | 10 | 10% |
| Animal feed | 4 | 4% |
| Total | 100 | 100% |

and the firms' official websites. In addition, the reason for using the year 2012 as a starting point was that Indonesia has fully started to implement IFRS convergence in accounting practice since 2012. According to Juniarti et al. (2018), the IFRS convergence in Indonesia started with the adoption phase of 2008–2010, the preparation in 2011, and the implementation phase in 2012. Based on those characteristics, the data used in this study is panel data and it will be analyzed by using the panel regression method.

2.2. Models and measurements

The paper used Eviews for the calculation of earnings quality; meanwhile, LISREL was used for structural equation modeling (SEM) for the path analysis method. According to Hair et al. (2007), the sample required to test hypotheses in SEM is between 100 and 200. In addition, the sample selection is also in line with Teh et al. (2017). Hence, the sample in this paper is in line with the requirement.

The study implemented accrual-based earnings management proxies for quality of earnings because previous research has mostly employed

accruals modification as a proxy for the earnings management (Ismail et al., 2015; Nugroho et al., 2019; Rahayu et al., 2019; Saona et al., 2019; Strydom et al., 2017). The first earnings management variable was taken from Dechow and Dichev (2002), as suggested by Francis et al. (2005). Francis et al. (2005) take into account firms' economic surroundings, arguably resulting in a better proxy. The model is a more powerful equation because of the addition of variation in revenue (ΔREV) and property, plant and equipment (PPE). Hence, the model is calculated by:

$$\begin{aligned}
 TCA_{a,b} = & \alpha_0 + \alpha_1 CFO_{a,b-1} + \\
 & + \alpha_2 CFO_{a,b} + \alpha_3 CFO_{a,b+1} + \\
 & + \alpha_4 \Delta REV_{a,b} + \alpha_5 PPE_{a,b} + \varepsilon_{a,b},
 \end{aligned} \tag{1}$$

where $TCA_{a,b}$ is ΔCA (the difference of current assets) – ΔCL (the difference of current liabilities) – $\Delta Cash$ (the difference of cash) + $\Delta STDEBT$ (the difference of debt) – DEP (company's depreciation); $CFO_{a,b}$ is the cash flow from operations of the firm a in year b ; $\Delta REV_{a,b}$ is the change in revenue; $PPE_{a,b}$ is property, plant, and equipment. All values are divided by total assets. $\varepsilon_{a,b}$ is residual.

The quality of earnings is the standard deviation on the estimated residual of the total current accrual of firm a in year b as in equation (1). It indicated that a larger variability of the residuals represents a lower quality of earnings. However, according to Ismail et al. (2015), the quality of earnings computation demands sufficient data. At least eight years of data are demanded to compute the quality of earnings. However, it was stated that some emerging markets such as Malaysia were not able to provide the data required. Therefore, the study followed Ismail et al. (2015) and used six years of annual data for quality of earnings computation. The residuals of equation (1) were based on the Chow test, LM test, and Hausman test on panel data from 100 manufacturing firms from 2012 to 2017. The first proxy of accruals quality from Francis et al. (2005) was denoted AQF. Hence, the quality of earnings (AQF) was the standard deviation of residuals of equation (1). There was 500 firm-years observation for quality of earnings (AQF) measurement.

As for boardroom diversity ($BOARD1$), the study followed Tarigan et al. (2018) and Kılıç and Kuzey (2016). This paper used Blau Index for $BOARD1$ variable. The formula for the Blau Index is:

$$BOARD1 = 1 - \sum_{i=1}^n P_i^2, \quad (2)$$

where P_i^2 is the portion of male and female board members and n is two. 0 is the minimum value while the maximum is 0.5 (Kılıç & Kuzey, 2016). This paper used the proportion of female directors from 2012 to 2017. For example, if there was a difference in female directors' proportion from 2012 to 2017, then the latest condition was used.

Moreover, low quality of earnings could result from high business uncertainties. These uncertainties could lead to the high variability of cash flows from operations. The presence of females in the boards could send a signal to various stakeholders such as investors and customers that the company supported gender equality and it can bring stability in cash flow since many female directors are appointed as chief financial officers. Moreover, this study used Ismail et al. (2015) and Nugroho et al. (2019) for cash flow stability measurement ($CFOVAR$). Hence, the formula for cash flow stability is:

$$CFOVAR = \sqrt{\frac{1}{N} \sum_{i=1}^N [CFO_a - \overline{CFO_a}]^2}, \quad (3)$$

where CFO_a was the cash flow from operating and $\overline{CFO_a}$ was the average of cash flow from operating. In this study, a standard deviation of cash flow from five years of data was used.

Further, the structural equation model was constructed. This model was processed with LISREL statistical program. The models are:

$$AQF = p_1 CFOVAR + \varepsilon_1, \quad (4)$$

$$\begin{aligned} AQF = & \gamma_1 SHAR + \gamma_2 BIG4 + \\ & + \gamma_3 LOSS + \gamma_4 SIZE + \\ & + \gamma_5 SALESVAR + \gamma_6 LEV + \\ & + \gamma_7 BOARD1 + \varepsilon_2, \end{aligned} \quad (5)$$

$$CFOVAR = \beta_1 BOARD1 + \varepsilon_3, \quad (6)$$

where AQF is quality of earnings as previously defined; $CFOVAR$ is the cash flow variability as previously described; $BOARD1$ is the boardroom's gender diversity variable computed with Blau Index; $SHAR$ is a control variable, it is dummy variable (1 is for a sharia-compliant firm) else 0, the researcher used Indonesia Sharia Stock Index (ISSI) as a reference whether a company is a sharia-compliant or not; $BIG4$ is also a control variable, it is dummy variable (1 is for big4 auditing firm) else 0; $SIZE$ is a control variable, it is the natural logarithm of companies' total assets; $SALESVAR$ is a control variable, it is the standard deviation of sales revenue from 2013 to 2017; $LOSS$ is a control variable, it is dummy variable (1 is for the companies that have a loss from 2013 to 2017) else 0; LEV is also a control variable, it is total debt divided by total assets.

Moreover, there are some variable controls in this study. Nugroho et al. (2019) and Sabrun et al. (2018) showed sharia-obedient firms in Indonesia have bigger encouragement to provide a better quality of accruals in accounting reports. Similarly, Ismail et al. (2015) found that big four accounting firms produce better auditing services and better quality of accruals reports. In addition, previous studies also showed that firms that experience net loss have produced lower earnings

Source: Developed by the authors.

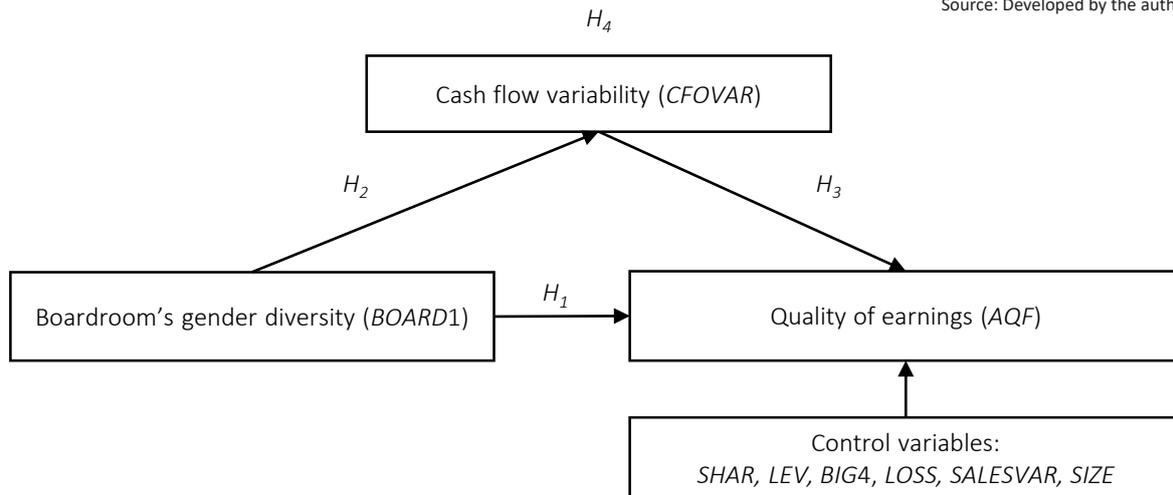


Figure 1. Research framework

quality. Further, Nugroho and Jasman (2018) and Saona et al. (2019) showed that firms with higher leverage and higher sales tend to produce lower earnings quality. Finally, firm size (SIZE) has a positive relationship with earnings quality, meaning that companies with higher capital intensity tend to have a higher quality of earnings (Strydom et al., 2017).

Furthermore, the study also conducted a sensitivity test. Following Ismail et al. (2015) and Nugroho et al. (2019), this paper used another well-known proxy for earnings management. Dechow and Dichev's (2002) model was utilized. This variable was denoted with AQD. The equation for this model is:

$$TCA_{a,b} = \alpha_0 + \alpha_{1,a}CFO_{a,b-1} + \alpha_{2,a}CFO_{a,b} + \alpha_{3,a}CFO_{a,b+1} + \varepsilon_{a,b}, \quad (7)$$

where $TCA_{a,b}$ is the total current accrual of the company a in year b (as previously described in equation (1)); $CFO_{a,b}$ is the cash flow from operations of firm a in year b. All values are divided by total assets. $\varepsilon_{a,b}$ is residual.

According to the model (AQD), the quality of accruals is the standard deviation of residuals. In other words, the larger the variation of residuals in equation (7), the lower the quality of earnings. Further, the study followed Saona et al. (2019) and used another proxy for the boardroom's diversity, which was the Shannon Index. This variable was denoted BOARD2. The index was cal-

culated with the same input as Blau Index. The Shannon Index takes values of 0 when there is no gender diversification. Meanwhile, the index value is 0.693 when there is an equal percentage of each gender category. The formula of the Shannon Index (BOARD2) is:

$$BOARD2 = \sum_{i=1}^s - (P_i \cdot \ln P_i), \quad (8)$$

where P_i is the percentage of the population made up of category i; S is the number of categories encountered (in this case, male and female). Hence, the structural equation model for the sensitivity test is:

$$AQD = p_1CFOVAR + \varepsilon_1, \quad (9)$$

$$AQD = \gamma_1SHAR + \gamma_2BIG4 + \gamma_3LOSS + \gamma_4SIZE + \gamma_5SALESVAR + \gamma_6LEV + \gamma_7BOARD2 + \varepsilon_2, \quad (10)$$

$$CFOVAR = \beta_1BOARD2 + \varepsilon_3, \quad (11)$$

where BOARD2 is the boardroom's diversity variable computed with Shannon Index; the rest of the variables are previously mentioned. Figure 1 is the research framework.

3. RESULTS

Based on the mean values (Table 2), companies with female directors have a significantly better

Table 2. Descriptive statistics (non-dummy)

Source: IDX, processed.

| Variable | Board of directors | n | Mean | Median | Standard deviation | Normality test | Mean difference |
|----------|--------------------|-----|--------|--------|--------------------|----------------|-----------------|
| | | | | | | Sig. | Sig. (2-tailed) |
| AQF | With female | 42 | 0.1506 | 0.1098 | 0.1450 | 0.000** | 0.000** |
| | No female | 58 | 0.2375 | 0.1605 | 0.1809 | – | – |
| AQD | With female | 42 | 0.1539 | 0.1160 | 0.1510 | 0.000** | 0.000** |
| | No female | 58 | 0.2384 | 0.1635 | 0.1812 | – | – |
| CFOVAR | With female | 42 | 0.0414 | 0.0380 | 0.0228 | 0.000** | 0.000** |
| | No female | 58 | 0.0661 | 0.0552 | 0.0596 | – | – |
| SIZE | With female | 42 | 28.775 | 28.479 | 1.7451 | 0.168 | 0.054 |
| | No female | 58 | 28.132 | 27.941 | 1.4663 | – | – |
| SALESVAR | With female | 42 | 0.1295 | 0.1006 | 0.1065 | 0.000** | 0.095 |
| | No female | 58 | 0.1897 | 0.1310 | 0.2055 | – | – |
| LEV | With female | 42 | 0.4061 | 0.3559 | 0.2006 | 0.000** | 0.001** |
| | No female | 58 | 0.6239 | 0.5712 | 0.4449 | – | – |
| BOARD1 | – | 100 | 0.1524 | 0.000 | 0.1914 | – | – |
| BOARD2 | – | 100 | 0.2274 | 0.000 | 0.2783 | – | – |

Note: AQF = Quality of Accruals (Francis et al., 2005); AQD = Quality of Accruals (Dechow & Dichev, 2002); CFOVAR = five years standard deviation of cash flow from operating; SIZE = log of total asset; SALESVAR = five years standard deviation of firm’s revenue; LEV = total debt divided by total assets; BOARD1 = boardroom’s gender diversity using Blau Index; BOARD2 = boardroom’s diversity using Shannon Index Kolmogorov-Smirnov is used for normality test; Mann-Whitney test is used if the data is not normal otherwise independent t-test is used (mean difference test); (**) significant at $\alpha = 0.05$. The data is processed with SPSS 22.

quality of earnings (AQD and AQF), significantly better cash flow (CFOVAR), and significantly better LEV. Based on the mean difference statistical test, manufacturing companies with gender diversification are statistically different in earnings management (AQF and AQD), cash flow variability (CFOVAR), and LEV compared to the ones without gender diversification.

fication in boards that used BIG4 auditing firms was marginally less than the companies without gender diversification. In addition, the number of manufacturing companies with gender diversification in boards was more profitable compared to the companies without gender diversification and this result was in line with Dwiharti and Adhariani (2018).

Table 3 shows the descriptive statistics for dummy values. The number of sharia-compliant big manufacturing companies (SHAR) with female directors was marginally less than the companies without gender diversification. Similarly, the number of manufacturing companies with gender diversi-

This paper used path analysis to test the hypotheses using LISREL. Therefore, it was required to compute the goodness of fit. Table 4 shows the goodness of fit from structural equations (4), (5), and (6). According to the goodness of fit values, it shows that the equation modeling was in line

Table 3. Descriptive statistics (dummy)

Source: IDX, processed.

| Variable | Board of directors | n |
|----------|--------------------|----|
| SHAR | With female | 34 |
| | Without female | 37 |
| BIG4 | With female | 16 |
| | Without female | 21 |
| LOSS | With female | 14 |
| | Without female | 31 |

Note: SHAR = sharia-compliant status firms; BIG4 = companies audited by BIG4 auditing firms; LOSS = firms experiencing loss during 2012–2017.

Table 4. Goodness of fit

Source: Data processed with LISREL.

| Rules | | Values | Threshold values | Explanation | |
|------------------------------|---------------------------------|--------|------------------|-------------|--|
| 1. | RMSEA | 0.065 | < 0.08 | Good | |
| 2. | P-value – close fit | 0.35 | > 0.05 | Good | |
| Akaike's information | | | | | |
| 1. | Independence AIC | 313.32 | – | 1. | Good since 86.31 < 313.32 and 86.31 < 90 |
| 2. | Model AIC | 86.31 | – | | |
| 3. | Saturated AIC | 90.00 | – | | |
| 4. | Independence CAIC | 345.77 | – | 2. | Good since 226.91 < 345.77 and 226.91 < 252.23 |
| 5. | Model CAIC | 226.91 | – | | |
| 6. | Saturated CAIC | 252.23 | – | | |
| Chi-Square and probabilities | | | | | |
| 1. | Minimum fit | 0.19 | > 0.05 | Good | |
| 2. | Normal theory | 0.22 | > 0.05 | Good | |
| 1. | Expected cross-validation index | 0.94 | – | 1. | Good since 0.94 < 0.98 |
| 2. | ECVI – saturated | 0.98 | – | 2. | Good since 0.98 < 3.41 |
| 3. | ECVI – independence | 3.41 | – | | |
| 1. | The goodness of fit indices | 0.98 | ≥ 0.90 | Good | |
| 2. | Adjusted goodness of fit | 0.86 | ≥ 0.90 | Acceptable | |
| 3. | Standardized RMR | 0.67 | < 0.08 | Good | |
| Fit index: normed fit index | | 0.97 | ≥ 0.90 | Good | |
| Non-Normed fit index | | 0.94 | ≥ 0.90 | Good | |
| Comparative fit | | 0.99 | ≥ 0.90 | Good | |
| Incremental fit | | 0.99 | ≥ 0.90 | Good | |
| Relative fit | | 0.82 | ≥ 0.90 | Acceptable | |

with the threshold values except for RFI and AGFI, which were still acceptable. In other words, the equation could be used to test the hypotheses. In addition, Table 5 shows the direct effect of variables in equations (4), (5), and (6). This study also observed the indirect effect. In this case, there was only one indirect effect studied, variable BOARD1 on AQF through CFOVAR. Table 6 shows the indirect effect of this particular variable. The meth-

od used for analyzing the mediation effect of CFOVAR variable was the Sobel test.

In Table 5, variable BOARD1, which is boardroom's gender diversity, has a negative relationship and is insignificant with quality of earnings (AQF).

Based on the Sobel test (Table 6), it is confirmed that cash flow variability is the mediator for the

Table 5. A direct effect of variables in equations (4), (5), and (6)

Source: Data processed with LISREL.

| Variables | Unstandardized estimate | Coefficient standardized | t-value |
|-----------------|-------------------------|--------------------------|---------|
| SHAR → AQF | –0.10 | –0.28 | –3.60** |
| BIG4 → AQF | –0.06 | –0.17 | –2.05** |
| LOSS → AQF | 0.06 | 0.18 | 2.14** |
| SIZE → AQF | 0.01 | 0.08 | 0.97 |
| SALESVAR → AQF | 0.27 | 0.39 | 4.92** |
| LEV → AQF | 0.01 | 0.03 | 0.30 |
| BOARD1 → AQF | 0.03 | –0.04 | –0.49 |
| CFOVAR → AQF | 0.96 | 0.29 | 4.03** |
| BOARD1 → CFOVAR | –0.06 | –0.23 | –2.25** |

Note: AQF = Quality of Accruals (Francis et al., 2005); CFOVAR = five years standard deviation of cash flow from operating; SIZE = log of total asset; SALESVAR = five years standard deviation of firm's revenue; LEV = total debt divided by total assets; BOARD1 = boardroom's gender diversity using Blau Index; BOARD1 = boardroom's diversity using Blau Index; SHAR = sharia-compliant status firms; BIG4 = companies audited by BIG4 auditing firms; LOSS = firms experiencing loss during 2012–2017; ** significant at $\alpha = 0.05$.

Table 6. An indirect effect of BOARD1 on AQF through CFOVAR

Source: Data processed with LISREL.

| Variable | Test statistic | P-value |
|-----------------------|----------------|---------|
| BOARD1 → CFOVAR → AQF | 1.96 | 0.04** |

Note: ** significant at $\alpha = 0.05$. The data was processed with the Sobel test.

Table 7. A direct effect of variables in equations (9), (10), and (11) – sensitivity check

Source: Data processed with LISREL.

| Variables | Unstandardized estimate | Coefficient standardized | t-value |
|-----------------|-------------------------|--------------------------|---------|
| SHAR → AQD | -0.10 | -0.26 | -3.66** |
| BIG4 → AQD | -0.06 | -0.16 | -1.91* |
| LOSS → AQD | 0.06 | -0.18 | 2.06** |
| SIZE → AQD | 0.39 | 0.06 | 0.73 |
| SALESVAR → AQD | 0.39 | 0.40 | 5.13** |
| LEV → AQD | 0.01 | 0.01 | 0.15 |
| BOARD2 → AQD | -0.02 | -0.03 | -0.35 |
| CFOVAR → AQD | 0.95 | 0.28 | 3.91** |
| BOARD2 → CFOVAR | -0.04 | -0.24 | -2.34** |

Note: ** significant at $\alpha = 0.05$, * significant at $\alpha = 0.10$; AQD = Quality of Accruals (Dechow & Dichev, 2002); CFOVAR = five years standard deviation of cash flow from operating; SIZE = log of total asset; SALESVAR = five years standard deviation of firm's revenue; LEV = total debt divided by total assets; BOARD2 = boardroom's gender diversity using Shannon Index; SHAR = sharia-compliant status firms; BIG4 = companies audited by BIG4 auditing firms; LOSS = firms experiencing loss during 2012–2017; Goodness of Fit: RMSEA = 0.06 with P-Value – Close Fit = 0.37; ECVI = 0.93; GFI = 0.98; IFI = 0.99; PGFI = 0.13; NFI = 0.97; Minimum Fit – Chi-Square = 8.34 (P = 0.21); Normal Theory – Chi-Square = 8.00 (P = 0.24).

Table 8. An indirect effect of BOARD2 on AQD through CFOVAR

Source: Data processed with LISREL.

| Variable | Test statistic | P-value |
|-----------------------|----------------|---------|
| BOARD2 → CFOVAR → AQD | 2.007 | 0.04** |

Note: ** significant at $\alpha = 0.05$. The data was processed with the Sobel test.

boardroom's gender diversity and earnings quality in Indonesian manufacturing firms.

Further, Table 7 shows the results of a sensitivity check. Similar to Table 6, the method used for analyzing the mediation effect of CFOVAR variable was the Sobel test. Moreover, consistent with the previous result, Table 7 also shows the goodness of fit. The results of Table 7 confirm the result of Table 5. Moreover, an indirect effect of BOARD2 on AQD through CFOVAR is in Table 8 and the results are in line with Table 6. Hence, this study found robust evidence that cash flow variability is the mediator of the boardroom's gender diversity and quality of accruals for Indonesian big manufacturing firms.

4. DISCUSSION

Manufacturing companies with female directors were not statistically different in SIZE and sales variability (SALESVAR) compared to the ones without gender diversification. Moreover, BOARD1 (Blau Index) and BOARD2 (Shannon Index) show that male directors were still dominating in the manufacturing companies' board of directors. Tarigan et al. (2018), Dwiharti and Adhariani (2018), and Saona et al. (2019) also showed that fewer women attain a top management position compared to men. In other words, the structures of the boards were not a balanced representation of males and females.

The finding in this study also indicates that the presence of female directors cannot directly influence the accrual-based earnings in Indonesia. This is consistent with Rahayu et al. (2019) who conducted a similar study in Indonesia with a different proxy of accruals quality. However, this result is not in line with Saona et al. (2019) and Strydom et al. (2017). In addition, the results support Sawitri et al.'s (2016) findings that female directors have a non-positive relation with bank performance in Indonesia. It is argued that to expand business in emerging markets such as Indonesia, the fourth most populous country in the world, requires aggressive top management, which is closely related to male directors.

In addition, there is no corporate governance recommendation for appointing female executives to companies listed on the Indonesia Stock Exchange (IDX). Hence, the presence of female directors is not a significant inducement for managers to report better quality of earnings. The development of good corporate governance and the implementation of IFRS, high-quality accounting standards, in Indonesia has made big listed firms follow the standards thoroughly. Further, many female directors work in sharia-compliant companies as shown in Table 3. Based on the condition, this study finds that sharia is an effective monitoring effort in mitigating managerial opportunistic behavior through accruals, thus increasing the quality of the accounting report. This study considers that although Indonesia does not have regulation about minimum female representation on the board, the big manufacturing firms in Indonesia are already under close examination such as sharia-compliant status. Therefore, this study considers that if female and male directors are supported by sharia-compliant status, it can reduce earnings management practice.

Additionally, the control variables such as SHAR, BIG4, SALESVAR, and LOSS are significant. Hence, H_1 is accepted. These results are consistent with previous findings in Indonesia and Malaysia (Ismail et al., 2015; Nugroho et al., 2019; Sabrun et al., 2018). For instance, sharia-compliant firms in Indonesia have bigger motivation to provide better accounting reports. Further, big four accounting firms produce better auditing services. Additionally, firms that experience net loss have produced lower earnings quality.

It is also confirmed that cash flow variability is the mediator for the boardroom's gender diversity and earnings quality in Indonesian manufacturing firms. The significant relationship between cash flow variability and quality of accruals is consistent with Ismail et al. (2015) and Nugroho et al. (2019). Finally, the result also confirms the positive and significant relationship between the boardroom's diversity and cash flow variability. Based on the results, H_2 , H_3 , and H_4 are accepted. These results support the argument that women are not typically risk lovers. Widyawati et al. (2018) showed that female boards avoid risk-taking actions rather than commissioners. In addition, many female directors in Indonesian manufacturing firms are chief financial officers. Hence, their positions as chief financial officers support the negative and significant relationship between the boardroom's diversity and cash flow variability. Further, Pangestu et al. (2019) suggested that female directors could lead to diversification and higher independence. It is indicated that the involvement of women in the board of directors would improve corporate governance and they become controlling agents. Therefore, female directors as controlling agents can reduce earnings management practice.

CONCLUSION

This study aims to examine the boardroom's gender diversity and quality of accruals i.e. earnings in Indonesia by incorporating a mediator that indirectly connects the boardroom's gender diversity to the quality of earnings in Indonesia. By using the panel regression this study found that the boardroom's gender diversity does not have a significant effect on the quality of earnings, while the involvement of women in the board of directors would improve corporate governance and they become controlling agents. The results revealed that cash flow variability is the mediator for the boardroom's gender diversity and earnings quality in Indonesian big manufacturing firms. The results also support the idea that

female boards avoid risk-taking action directors rather than commissioners. This study revealed that, unlike many European countries, there is no corporate governance recommendation for appointing female executives to companies listed in the Indonesia Stock Exchange (IDX). In addition, female and male directors are supported by sharia-compliant status and it can reduce earnings management practice. So Indonesian companies should consider some females on the board, also the Financial Service Authority should consider issuing some regulations regarding these matters.

There are some limitations. First, the sample was limited to manufacturing firms. There was a different approach to obtaining net income across different industries. Therefore, only one specific industry was taken. Consequently, the results could be compared among firms. It is recommended that further studies can incorporate many industries. Second, the results could be influenced by endogeneity, which has not been tackled in this paper.

The managerial implication is that although the boardroom's gender diversity does not directly affect earnings management, it is encouraged that the boardroom's gender diversity should be maintained. The results also revealed that female directors are able to stabilize cash flow variability.

AUTHOR CONTRIBUTIONS

Conceptualization: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Data curation: Robiyanto Robiyanto.

Formal analysis: Robiyanto Robiyanto.

Funding acquisition: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Investigation: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Methodology: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Project administration: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Resources: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Supervision: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Validation: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Visualization: Robiyanto Robiyanto.

Writing – original draft: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

Writing – review & editing: Robiyanto Robiyanto, Andreas Lako, Angelina Ika Rahutami.

REFERENCES

1. Charness, G., & Gneezy, U. (2012). Strong Evidence for Gender Differences in Risk Taking. *Journal of Economic Behavior & Organization*, 83(1), 50-58. <https://doi.org/10.1016/j.jebo.2011.06.007>
2. Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77, 35-59. <https://doi.org/10.2139/ssrn.277231>
3. Dwiarti, A. N., & Adhariani, D. (2018). CEO Gender, Financial Performance, and Firm Risk Level: Evidence from Indonesia. *International Journal of Economics and Management*, 12(1), 67-77.
4. Endrikat, J., de Villiers, C., Guenther, T. W., & Guenther, E. M. (2021). Board Characteristics and Corporate Social Responsibility: A Meta-Analytic Investigation. *Business & Society*, 60(8), 2099-2135. <https://doi.org/10.1177/0007650320930638>
5. Fauzi, F., Basyith, A., Ho, P., & McMillan, D. (rev.ed). (2017). Women on boardroom: Does it create risk? *Cogent Economics & Finance*, 5(1), 1-14. <https://doi.org/10.1080/23322039.2017.1325117>
6. Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics*, 39(2), 295-327. <https://doi.org/10.1016/j.jacceco.2004.06.003>
7. Hair, J. F., Monet, A. H., Samouel, P., & Page, M. (2007). *Research Methods for Business*. England: John Wiley & Sons.
8. Handriani, E., & Robiyanto, R. (2018). Investment Opportunity and Industrial Growth in Indonesia. *International Journal of Business and Society*, 19(2), 295-312. Retrieved from <http://www.ijbs.unimas.my/images/repository/pdf/Vol19-no2-paper3.pdf>

9. Handriani, E., & Robiyanto, R. (2019). Institutional ownership, independent board, board size, and firm performance: evidence from Indonesia. *Contaduría y Administración*, 64(3), e118. <http://dx.doi.org/10.22201/fca.24488410e.2018.1849>
10. Hartono, P. V. C., Suganda, T. R., & Cahyadi, S. (2018). Accrual and Real Earnings Management Through Cash Flows Operating Activity Towards Market Performance. *Journal of Applied Management (JAM)*, 16(3), 392-401. <https://doi.org/10.21776/ub.jam.2018.016.03.03>
11. Herring, C. (2017). Is Diversity Still a Good Thing? *American Sociological Review*, 82(4), 868-877. <https://doi.org/10.1177/0003122417716611>
12. Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource Dependence Theory: A Review. *Journal of Management*, 35(6), 1404-1427. <https://doi.org/10.1177/0149206309343469>
13. Isidro, H., & Sobral, M. (2015). The Effects of Women on Corporate Boards on Firm Value, Financial Performance, and Ethical and Social Compliance. *Journal of Business Ethics*, 132(1), 1-19. <https://doi.org/10.1007/s10551-014-2302-9>
14. Ismail, W. A. W., Kamarudin, K. A., & Sarman, S. R. (2015). The quality of earnings in Shariah-compliant companies: evidence from Malaysia. *Journal of Islamic Accounting and Business Research*, 6(1), 19-41. <https://doi.org/10.1108/JIABR-03-2013-0005>
15. Jadiyahappa, N., Jyothi, P., Sireesha, B., & Hickman, L. E. (2019). CEO gender, firm performance and agency costs: evidence from India. *Journal of Economics Studies*, 46(2), 482-495. <https://doi.org/10.1108/JES-08-2017-0238>
16. Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
17. Jizi, M. I., & Nehme, R. (2017). Board gender diversity and firms' equity risk. *Equally, Diversity and Inclusion: An International Journal*, 36(7), 590-606. <https://doi.org/10.1108/EDI-02-2017-0044>
18. Joecks, J., Pull, K., & Vetter, K. (2013). Gender Diversity in the Boardroom and Firm Performance: What Exactly Constitutes a "Critical Mass?" *Journal of Business Ethics*, 118(1), 61-72. <https://doi.org/10.1007/s10551-012-1553-6>
19. Juniarti, J., Helena, F., Novitasari, K., & Tjamdinata, W. (2018). The Value Relevance of IFRS Adoption in Indonesia. *Jurnal Akuntansi Dan Keuangan*, 20(1), 13-19. <https://doi.org/10.9744/jak.20.1.13-19>
20. Kanter, R. (1977). Some effects of proportions on group life: Skewed sex ratios and responses to token women. *American Journal of Sociology*, 82(5), 965-990. Retrieved from <https://www.jstor.org/stable/2777808>
21. Kiliç, M., & Kuzey, C. (2016). The effect of board gender diversity on firm performance: evidence from Turkey. *Gender in Management*, 31(7), 434-455. <https://doi.org/10.1108/GM-10-2015-0088>
22. Křečková, Z., Zdražilová, D., & Řezanková, H. (2016). The Added Value of Women in Management: The Czech Case. *Prague Economic Papers*, 25(03), 354-373. <https://doi.org/10.18267/j.pep.588>
23. Krismiaji, K., Wiratno, D. H., & Ashari, S. (2019). Ownership Concentration, Firm Size, and Information Value Relevance: Indonesian Evidence. *Journal of Accounting and Investment*, 20(2), 99-113. <https://doi.org/10.18196/jai.2002119>
24. Lu, Q., Chen, S., & Chen, P. (2020). The Relationship between Female Top Managers and Corporate Social Responsibility in China: The Moderating Role of the Marketization Level. *Sustainability*, 12(18), 7730. <https://doi.org/10.3390/su12187730>
25. Mittal, S. L. (2018). Female's Representation in the Boardroom and Their Impact on Financial Distress: An Evidence from Family Businesses in India. *Indian Journal of Corporate Governance*, 11(1), 35-44. <https://doi.org/10.1177/0974686218763857>
26. Nugroho, B. A., & Jasman, J. (2018). Can Managers Use Accruals Quality for Creating Investment Opportunities and Increasing Firm Value? *Binus Business Review*, 9(3), 235-245. <https://doi.org/10.21512/bbr.v9i3.4891>
27. Nugroho, B. A., Annissa, R., Juwono, E., & Wijayanti, I. (2019). Does Sharia-Obedient Status Cause Firms to Be Less Involved in Accrual-Based Earnings Management? *Binus Business Review*, 10(1), 1-10. <https://doi.org/10.21512/bbr.v10i1.5237>
28. Obigbemi, I. F., Omolehinwa, E. O., Mukoro, D. O., Ben-Caleb, E., & Olusanmi, O. A. (2016). Earnings Management and Board Structure: Evidence from Nigeria. *SAGE Open*. <https://doi.org/10.1177/2158244016667992>
29. Pangestu, S., Gunawan, S., & Wijaya, J. S. (2019). The Presence and Characteristics of Female Directors: How They Influence Firm Performance. *Indonesian Journal of Business and Entrepreneurship*, 5(1), 13-20. <https://doi.org/10.17358/IJBE.5.1.13>
30. Pasaribu, P. (2017). Female Directors and Firm Performance: Evidence from UK Listed Firms. *Gadjah Mada International Journal of Business*, 19(2), 145-166. <https://doi.org/10.22146/gamai-jb.15619>
31. Pfeffer, J., & Salancik, G. R. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row.
32. Rahayu, S. M., Ramadhanti, W., Rahayu, D. S., Osada, H., & Indrayanto, A. (2019). Gender Stereotypes in Indonesian Public Companies' Performance. *Journal Applied Management (JAM)*, 17(1), 1-7. <https://doi.org/10.21776/ub.jam.2019.017.01.01>

33. Sabrun, I. M., Muhamad, R., Yusoff, H., & Darus, F. (2018). Do Shariah-compliant Companies Engage Lesser Earnings Management Behaviour? *Asian Journal of Business and Accounting*, 11(1), 1-36. <https://doi.org/10.22452/ajba.vol11no1.1>
34. Saona, P., Muro, L., Martin, P. S., & Baier-Fuentes, H. (2019). Board of Director's Gender Diversity and Its Impact on Earnings Management: An Empirical Analysis for Select European Firms. *Technological and Economic Development of Economy*, 25(4), 634-663. <https://doi.org/10.3846/tede.2019.9381>
35. Sawitri, H. S. R., Untoro, W., & Trinugroho, I. (2016). Women in Top Management and Bank Performance: Evidence from Indonesia. *Indonesian Capital Market Review*, 8, 23-31. <https://doi.org/10.21002/icmr.v8i1.5537>
36. Singhathep, T., & Pholphirul, P. (2015). Female CEOs, Firm Performance, and Firm Development: Evidence from Thai Manufacturers. *Gender, Technology and Development*, 19(3), 320-345. <https://doi.org/10.1177/0971852415596865>
37. Strydom, M., Yong, H. H. A., & Rankin, M. (2017). A few good (wo)men? Gender Diversity on Australian boards. *Australian Journal of Management*, 42(3), 404-427. <https://doi.org/10.1177/0312896216657579>
38. Tarigan, J., Hervindra, C., & Hatane, S. E. (2018). Does Board Diversity Influence Financial Performance? *International Research Journal of Business Studies*, 11(3), 195-215. <https://doi.org/10.21632/irjbs.11.3.195-215>
39. Teh, B. H., Ong, T. S., & Ying, L. Y. (2017). Earnings Management in Malaysian Public Listed Family Firms. *Jurnal Pengurusan*, 51(2017), 183-193. <https://doi.org/10.17576/pengurusan-2018-51-16>
40. Triana, & Asri, M. (2017). The Impact of Female Directors on Firm Performance: Evidence from Indonesia. *Journal of Indonesian Economy and Business*, 32(1), 19-32. <https://doi.org/10.22146/jieb.21994>
41. Widyawati, N., Trinugroho, I., & Untoro, W. (2018). Family Ownership, Women in Top Management, and Risk-taking: Evidence from Indonesia. *Jurnal Keuangan dan Perbankan*, 22(4), 606-613. <https://doi.org/10.26905/jkdp.v22i4.2452>