# Jurnal\_Pendidikan\_Ekonomi\_Bis nis\_2021\_Rev\_10-10-21\_no\_colour.pdf

**Submission date:** 11-Oct-2021 01:10PM (UTC+0700)

**Submission ID:** 1670848218

File name: Jurnal\_Pendidikan\_Ekonomi\_Bisnis\_2021\_Rev\_10-10-21\_no\_colour.pdf (258.93K)

Word count: 7052

Character count: 39696



Jurnal Pendidikan Ekonomi & Bisnis, 9 (2) 2021, xxx-xx

#### JURNAL PENDIDIKAN EKONOMI & BISNIS

http://journal.unj/unj/index.php/jpeb

## MANAGEMENT BOARDS AND INDONESIA'S COMPANY INNOVATION PERFORMANCE

#### Desi Ilonia<sup>1</sup>, Zaitul<sup>2\*</sup>, and Eugene Okyere-Kwakye<sup>3</sup>

- <sup>1</sup>Economics and Business Faculty, Universitas Putra Indonesia YPTK, Indonesia
- <sup>2</sup>Economics 59 d Business Faculty, Universitas Bung Hatta, Padang, Indonesia
- <sup>3</sup>Faculty of Business and Management Studies, Koforidua Technical University, Ghana

#### 3

#### Article Info

Article history:

Received: 19 September 2019; Accepted: 22 January 2019; Published: 30 March 2019.

Keywords:
Management Board,
Innovation Performance,
Indonesia

#### Abstract

This study aims to investigate the influence of the management board's characteristics on company innovation performance. Management board characteristics are female in the management board, education background, and Chinese ethnicity in the management board. Resources dependency theory is applied to understand the research phenomena. Using 109 companies listed in the Indonesian stock market, multivariate regression analysis was employed. This study also employed five control variables: family ownership, foreign ownership, company profitability, company leverage, and company size. The result shows that female in management board is negatively related to innovation performance. Besides, family ownership, company profitability, company leverage, and company size positively affect innovative performance.

#### **d**bstrak

Penelitian ini bertujuan untuk menguji penga 5 h karakeristik dari Dewan Direksi terhadap kinerja inovasi perusahaan. Karakteristik Dewan Direksi diukur dengan tiga variabel yaitu perempuan di Dewan Direksi, latar belakang pendidikan Dewan Direksi, Etnik Cina di Dewan Direksi. Resources de 5 ndency theory digunakan untuk memahami pengaruh karakteristik Dewan Direksi terhadap kinerja inovasi perusaha 7. 109 perusahaan yang terdaftar pada Bursa Efek Indonesia dijadikan sebagai sampel pen 69 tian dan data diolah dengan menggunakan analisa regresi berganda. Penelitian in 5 juga menggunakan 5 variabel kontrol yaitu kepemilikan keluarga, kepemilikan asing, profitabilitas perusahaan, leverage perusahaan, dan ukuran perusahaan. Hasil penelitian menunjukan bahwa perempuan di Dewan Direksi berpengaruh negative terhadap kinerja inovasi. Selain itu, kepemilikan keluarga, profitabilitas perusahaan, leverage, dan ukuran perusahaan berpengaruh positif terhadap inovasi.

#### How to Cite:

Ilona, Zaitul, Okyere-Kwakye. (2019). Management boards and Indonesia's company innovation performance. *Jurnal Pendidikan Ekonomi & Bisnis*, 9(2), 101-111. https://doi.org/10.21009/JPEB.007.x.x

\* Corresponding Author: zaitul@bunghatta.ac.id Zaitul

ISSN 2302-2663 (online)

DOI: doi.org/10.21009/JPEB.007.x.x

#### INTRODUCTION

Some compani 23 today gain their competitive advantage through continuous innovation (Auh and Menguc, 2005). Corporate governance mechanisms can affect the values and motivations of managers regarding investment in strategies and practices (Mascena et al., 2020), including innovation strategy. Also, in 4 ovation is considered a crucial subscriber to the company's competitive advantage (Diaz-Fernandez et al., 2017). Liu et al. (2017) argue that innovation performance is linked to the innovation matrix with other pertinent organizations. Many sustainable companies have applied this strategy, such as Silicon Valley, Toyota, etc. The company has been gradually building a network to incline relationships with other organizational actors in professional, social, and exchange (Zheng et al., 2013). Powell et al. (1996) argue that innovation cautiously extends throughout interorganizational networks. In brief, innovation is a key factor for a company's success (Li and Yang, 2019). Investment in new R&D projects has long-term results for organizational viability and favourable dutcome (Singh and Gaur, 2013). Company Innovation performance is measured 15 an intensive research and development (ratio of total R & D expenses over total revenue) (Chao et al., 2017; Chatterji et al., 2013; Y. Li et al., 2019), the amount of R&D investment (Sarto et al., 2019), the number of patents (Kang et al., 2017), number of citations and claims (Balsmeier et al., 2017), and use the relevant indicators (Rejeb et al., 2020; Ruiz-Jimenez et al., 2016).

According to Upper-echelon theory, stra 44 ies for innovation are linked to the personal traits of the top management team (Kuo et al., 2017). Talke et al. (2010) argue that the configuration of top anagement teams influences innovation in a company. Besides, Ruiz-Jimenez et al. (2016) state that managers are the individuals who assemble strategic decisions and decide how to distribute the company resou 71s. Therefore, they would select the projects, goals, and objectives to be accomplished (Ruiz-Jimenez et al., 2016). Hillman and Dalziel (2003) argue that a proper composition of the board may lessen unpredictability, intensify information change over between external companies and the company, expand access to resources and help to formulate the company's strategy. Board diversity may build disagreement and conflict among professionals who bring about energetic information pursuit and processing (Midavaine et al., 2016). Singh 20 d Gaur (2013) state that corporate governance mechanisms have contributed to innovation or R&D decisions, especially 20 m the corporate governance structure and practice perspectives. According to Kuo et al. (2017), corporate governance and incentive structure have a significant relationship with the company's R&D investment decisions. Claessens et al. (2000) state that internal mechanisms govern companies from the emerging market due to the family and concentrated ownership of the company.

The mattrity of several studies investigating companies' performance in terms of innotion are conducted in the developed market (Balsmeier et al., 2014, 2017; Chao et al., 2017; C. Chen et al., 2016; J. Chen et al 61:018; Jajja et al., 2017; Kuo et al., 2018; Y. Li et al., 2019; Midavaine et al., 2016; Rejeb et al., 2020; Ruiz-Jimenez et al., 2016; Sarto et al., 2019; Teixeira and Bezerra, 2016; Torchia, Calabrò, Gabaldon, and Kanadli, 2018). However, there is a lack of prior studies exploring management boards and innovation performance in the Indonesian context. In addition, the woman on the company pard as determinants of companies innovation was investigated by limited previous studies (Rejeb et al., 2024 Ruiz-Jimenez et al., 2016; Torchia, Calabrò, Gabaldon, & Bogac, 2078). However, they study the women on the board of directors and company innoval on mostly in one-tier board system (Continental Europe corporate governance system). Balsmeier et al. (2014) investigate the role of the external 37 pervisory board in determining the innovative performance of German compa 43's. Balsmeier et al. (2017) study the effect of the independent board of directors on innovation. Chao et al. 3217) investigate the relationship between corporate governance and innovation performance. It can be concluded that there exists a 53 nificant effect of innovation investment on innovation performance. Chen et al. (2016) analyse the relation 18 between independent board members and the innovative performance of Taiwanese companies. Chen et al. (2018) investigate the influence of female board representation on innovation and firm performance. Further 47 ajja et al. (2017) conclude that innovation strategy influences innovation personner. Also, Kuo et al. (2018) investigate the effect of an educated director on R&D investment. Midavaire al. (2016) investigate the relationship be veen board diversity and company investment in R&D. Ruiz-Jimenez et al. (2016) document that the relationship between knowledge combination capabilities and innovation. Teixeira Bezerra (2016) report that the sources of Portuguese's company innovation performance are companies' opennes and the relative importance attributed to different sources of information for innovation. Torchia et al. (2018) study to effect of women directors on the innovation performance of Norwegian companies. Li et al. (2019) investigate the relations between technology director and innovation performance in China and found that technology director has a significant effect on company innovation performance. Sarto et al. (2019) also analyses Italian companies' innovation performance and concludes that heterogeneity of educational and functional director background affects the company innovation. Finally, Rejeb et al. (2020) investigate the board role on Tunisian listed companies and resume that gender diversity and board independent partially moderated the relatio to the companies of the companies innovation.

There are two corporate governance board systems in the world: the (17)-tier board system and the two-tier board system. According to Indonesia's corporate law, the two-tier board system is prescribed for companies: a s (64) rvisory board (Dewan Komisaris) and a management board (Dewan Direksi) (Darmadi, 2013). The management board performs the day-to-day management in a company. Agitul and Ilona (2018) argue that Indonesia adapts to the Continental European system. As the largest economy in Southeast Asia and the 16th-largest globally (Darmadi, 2016), Indonesia has been attracting foreign investors. However, the innovative process and output among Indonesian' company is still low. From preliminary assessment, we found that the average percentage investment on R&D expenditure per sale/revenue is very low (below 1%). that As an emerging capital market, it is characterized by weak external corporate governance nochanisms, such as inadequate legal systems and law enforcement and investor protection (La Porta et al., 1999). Previous studies focused less on the relationship between the management board and if 65 vation performance using the unique Continental European corporate governance system. Therefore, this study investigates the relationship between management board characteristics: Females in the management board, Education background of the management board, Chinese ethnicity in the management board, and innovation performance. This paper is organized into five-session: introduction, theoretical aspect, method, results and discussion, and conclusion and suggestion.

#### THEORETICAL ASPECT

#### Innovative Performance

Innovation is a complex activity in which knowledge is used to gain a commercial target. Innovation performance is critical to maintaining the sustainable competitive advantage of a company. Creative input, process and output would make the company profitable. Innovation can be done in functional management areas, such as marketing, finance, human resources, and operations or production. Innovative functional management and product or service brings companies to higher innovation performance. Besides, innovation performance increases financial performance and competitive advantages. Several theories explain why innovation performance varies among companies. Some companies have higher innovation performance, and others have lower innovation performance. From the Resources Dependency Theory (Zahra and Pearce, 1989), management contributes significantly in determining innovation performance. Besides, the supervisory board (Jensen and Meckling, 1976) could also influence the performance (e.g. Agency theory). Resources based theory (Barney, 1991) can also predict the innovative performance of the company. Variables from the resources dependency theory (Zahra and Pearce, 1989) are management board characteristics, such as female involvement, education background, and ethnicity in the management board.

#### Management Board

Tl25 concept of the management board is derived from the corporate governance board. There are two corporate governance systems: The Anglo-Saxon corporate gov 25 ance system and the Continental Europe system (Ilona 652 al., 2019; Zaitul and Ilona, 2019). The Continental Europe corporate governance system applies a two-tier board system: a supervisory board and a management board. Management boards run the day-to-day company business, and the supervisory board controls

them. In addition, the management board initiate the business ideas and execute the decisions made by the supervisory board through ratification. The supervisory board monitors the execution. The management board plays a significant role by building an innovative product or service and process.

A Female on the management board implies that a female participates as a member of the company management board. Females on the board carry diverse perspectives to the board booth and ease more informed decisions (Daily et al., 2000). Besides, the female board member also performs a different style of decision making (Peterson and Philpot, 2007). However, a female has a higher risk aversion in financial decision making (Srinidhi et al., 2011). Farrell and Hersch (2005) argue that there is no effect on the female inboard on company value. It is supported by (Issa et al., 2021), who believe that homogeneous board members contribute to better strategic decisions. In innovation, females on the management board restricted the number of financial resources used for innovation (Luo et al., 2020) due to their perception toward R&D project risk. Therefore, the presence of females in the management board reduced the innovation activities.

Finally, females in the management board decreased innovation performance. Management board members with economics, management and accounting backgrounds tend to perform better at innovation. A management board with this kind of educational background know about sources of the company's competitive advantages: Innovation. Therefore, they plan, organize, lead, and control innovation activities. Finally, it improves innovation performance. Chinese on the management board regards persons of Chinese ethnicity participating in the management board. Even though the Chinese population in Indonesia is around 3%, they control the wealth. There is some benefit of having Chinese ethnicity participating on the board. Chinese board members profess great leadership skillers a professional managers and can manage the company to gain a competitive advantage (Melmusi et al., 2019).

Previous studies are investigated the relationship management board characteristics are still lacking. Ruiz-Jimenez et al. (2016) investigate the effect of females on the management board on company performance and concluded that stall a positive relationship between female on a management board and organizational innovation performance. In addition, (Rejeb et al., 2020) conclude that the is no effect of females on board on companies innovation. However, when females are on board as a moderating variable, they succeed in moderating the relationship between board role (service role and control role) and (17) pany innovation (Rejeb et al., 2020).

The study about the effect of the education management board on innovation performance is still lacking. Midavaine et al. (2016) investigate the relationship between the educational diversity of a board and innovation and concluded that education diversity makes the company invest more in innovative processes. Previous research on the extension of Chinese ethnicity on a management board and innovation performance is also still lacking. Based on theory and previous study, we developed the following hypotheses:

H1: Management boards have a significant effect on company innovation performance

H1a: Females on management boards have a negative relationship with innovation performance

H1b: Educational background of management boards positively relates to innovation performance

H1c: Chinese ethnicity in management boards increases innovation performance

#### METHOD

The Companies listed in Indonesia's stock exchange were the object of the research object. The purposive sampling method was applied to gain the final sample. This study uses financial and non-financial disclosure data. The first criteria are that the companies consistently disclose their R&D investment, sex type, education background, and ethnic of management board, and ownership information. Second criteria, the companies release the annual report every year. Finally, the companies were not delisted durir the study period. The final sample is 109 companies or 327 companies-year (observation). The type of data used in this study is secondary data, collected over three years. There are three kinds of variables under discussion: dependent variable (innovation performance), independent variables (management board) and company's characteristics). Innovation performance was measured by intensive research and development (ratio

11

of total R & D expenses over total revenue) (Chao et al., 2017; Chatterji et al., 2013; Y. Li et al., 2019). While, (Sarto et al., 2019) employs the amount of R&D investment to measure innovation performance. Other studies use other measurements of company innovation, such as number of patents (Kang et al., 2015, number of citations and claims (Balsmeier et al., 2017), and use the relevant indicators per et al., 2020; Ruiz-Jimenez et al., 2016). Thus, the current study follows prior research of (Chao et al., 2017; Chatterji et al., 2013; Y. Li et al., 2019) that use the ratio of total R & D expenses over total revenue to measure innovation performance. Besides, females, educational background, and ethnicity a 42 proxies of the management board. Female in management board is calculated by ratio upon the number of femalis members in management board divided by a total member of the management board (Rejeb et al., 2020; Ruiz-Jimenez et al., 2016; Torchia, Calabrò, Gabaldon, and Bogac, 2018). The number of management board members with business education backgrounds is divided by the total member is a pross for the education background of the management board (Ujunwa et al., 2012). Thus, ethnicity is measured by the number of Chinese ethnic members of the management board to a total member of the management board is a measurement for ethnicity (Wellalage et al., 2012). Aside from company characteristics are foreign ownership, family ownership, company profitability, size, and leverage. We also use the proportional approach (Choi et al., 2007; Colpan and Moshikawa, 2012). In addition, company profitability uses the return 45h asset (ROA) as a proxy (Chi et al., 2019a; Kang et al., 2017). Moreover, company size is measured by total assets 110dh et al., 2014; Rejeb et al., 2020; Sarto et al., 2019). Finally, leverage is the debt to asset ratio (Li et al., 2019; Muthuveloo et al., 2017).

This study used the multivariate regression model. After that, the regression analysis was applied to a panel data approach. The normality, multicollinearity and heteroscedasticity test (Hair et al., 2014) is tested in advance. In addition, the data is examined first its outlier using the Grubb approach (Grubbs, 1969). Then, the normality using univariate test by applying Kolmogorov-Smirnov test and not normal data is proceeded to be tested using the skewness per andard error with a value greater than 3.59 considered normal (Manning and Munro, 2004). The next classical assumption is heteroskedasticity, and this research using the variance inflation factor (VIF) value. If the VIF value for each variable is lesser than 10, it can conclude that there is no correlation among independent variables (Gujarati, 1995). Further, the heteroskedasticity problem is detected using the White test (White, 1980) with p-value greater than 0.05. Research findings were based on p-value, where the p-value is lesser than 0.05, indicating that the independent variable has a significant effect on dependent variables (Sekaran, 2013)—the direction of the impact of the independent variable on the dependent variable based on the coefficient regression.

### RESULTS AND DISCUSSION

The observation number of this study i22 27 companies-years—table 1 summary of the research variables. The means value of IDR is 0.80%, with a minimum and maximum value of 0.00% and 6%, respectively. The average value of females on the management Board and educational background of the management board is 16.40% and 73.20%, respectively. Ethnicity on the management board has average value of 62.30% and 29.26% of family ownership. Average foreign ownership is 23.62%, with a minimum and maximum value of 0.00% and 23.62%, respectively. Further, average company

Table 1. Descriptive Analysis and Outlier test

profitability, leverage, and size are 3.72 %, 52.39% and Rp. 1,7774.80 billion, respectively.

Waniahlan		Descriptive statistic				Outlier test	
Variables	Min	Max	Means	SD	# obs	%	
IDR (%)	0.00	6.00	0.80	0.81	43.00	13.19	
FMB (%)	0.00	67.00	16.40	19.50	0.00	0.00	
EBMB (%)	0.17	1.00	73.20	21.90	0.00	0.00	
CEMB (%)	0.00	1.00	62.30	28.60	0.00	0.00	
FO (%)	0.00	85.00	29.26	29.57	10.00	3.07	

5

Fro (%)	0.00	83.23	23.62	26.14	14.00	4.29
Pro (%)	-22.23	30.60	3.72	6.68	22.00	6.75
Lev (%)	6.00	92.00	52.39	24.08	5.00	1.53
CS (Rp. billion)	1.30	26,185.50	1,774.80	412.61	110.00	33.74

Notes: IDR (intensity research & development), FMB (female in management board), EBMB (education background of the management board), CEMB (Chinese ethnic in management board), FO (family ownership), Fro (foreign ownership), Pro (company profitability), Lev (company leverage), and CS (company size)

Before proceeding to the regression analysis, the data were tested for the outlier. In this case, the Grubbs test was applied to detect and remedy the data (Grubbs, 1969). The result is also shown in Table 1. Management Board proxy is free from outliers. However, IDR was detected for 43 outliers (13.19%). The detected outlier for FO, Fro, Pro, Lev and company size is 3.07%, 4.29%, 6.75%, 1.53%, and 33.74%, respectively.

Having cleared the outlier data, the classical assumption test was conducted (normality, multicollinearity, and heteroscedasticity). For the normality test, this study used the Kolmogorov-Smirnov test, where the asym Sig must be greater than 0.05 for the data to be considered normal. Looking on Table 2, the result shows that only one variable is normal (leverage). Therefore, the skewness per standard error (Manning and Munro, 2004) was run to test the normality. Tis result indicated that the four variables were normal (EBMB, CEMB, FO, and CS). Un-normal data was transformed into a natural logarithm (Ln) and square root (Sqrt). Using the skewness per standard error, the rest of the variables were normal due to the value of skewness per standard error which was lesser than 3.59 (Manning and Munro, 2004).

Table 2. Normality Test

	Kolmogorov-Smirnov		Skewness/		Skw/SE post-		Final
variables		Kolmogorov-Simirnov		standard error		transformation	
	A sym Sig	Decision	Value	Decision	Ln	$\mathbf{sqrt}$	
IDR	0.00	not normal	66.99	12t normal	2.59	-	normal
FMB	0.00	not normal	6.76	not normal	0.30	-	normal
EBMB	0.00	not normal	-1.46	normal	-		normal
CEMB	0.00	not normal	-0.87	normal	-	-	normal
FO	0.00	not normal	3.53	normal	-	-	normal
$\operatorname{Fro}$	0.00	not normal	7.38	not normal	-	1.30	68 rmal
$\operatorname{Pro}$	0.00	not normal	6.47	not normal	-	3.50	normal
Lev	0.07	normal	-				normal
$^{\mathrm{CS}}$	0.00	not normal	2.63	normal	-	-	normal

Notes: IDR (intensity research & development), FMB (female in management board), EBMB (education background of the management board), CEMB 54 inese ethnic in management board), FO (family ownership), Fro (foreign ownership), Pro (company profitability), Lev (company leverage), and CS (company size)

The second classic assumption was multicollinearity. In this study, we used the variance inflation factor (VIF). The value of VIF is lesser th 10, indicating that there was no multicollinearity problem (Gujarati, 1995). The result in Table 4 shows that all VIF values were lesser than ten, so there was no multicollinearity problem.

Table 3. Result of Heteroscedasticity Test

	Model
Chi-Square	61.841
white test P-value	0.39
Ho (null)	Rejected

1

The last classical assumption test was he 35 oscedasticity. The test of heteroscedasticity uses the white test (White, 1980). If the White 3 st p-value is greater than 0.05, the model is considered free from any heteroscedasticity problem. Table 3 shows that the White test p-value is higher than 0.05, and it can be concluded that there 50 no problem with heteroscedasticity. The hypotheses were tested using multiple regression, and the sults can be seen in Table 4. The fitness of the model using the F statistic and F significance show that the model was fit. This is because the F significance is lesser than (265). Regarding model power, 93.79% variance of the dependent variable could be explained by independent variables; the rest was explained by other variables not included in this study.

Table 4. Result of Regression

Variables	VIF	Coefficient	SE	t stat	Decision
Constant	-	-0.004	0.002	-2.329	-
FMB	1.32	-0.002	0.001	-2.644***	supported
EBMB	1.08	0.002	0.001	1.234	not supported
CEMB	1.12	-0.001	0.001	-0.596	not supported
FO	1.23	0.000	0.000	4.035***	supported
Fro	1.07	0.000	0.000	1.255	not supported
Pro	1.48	0.000	0.000	2.736***	significant
Lev	1.72	0.000	0.000	5.060***	significant
CS	1.34	0.000	0.000	5.968***	significant
F statistic		253.3	113		
Fsig		0.00	00		
R square		93.7	79		

Note: IDR (intensity research & development), FMB (female in management board), EBMB (education background of the management board), CEMB (Chinese ethnic in management board), FO (family ownership), Fro (foreign ownership), Pro (company profitability), Lev (company leverage), and CS (company size).

The effect of the management boards on innovation performance could be seen from the value of t statistics from the regression result. Table 4 shows that the first hypoth 56 s on the female management boards and innovation performance is accepted with 79 atistical tests at the 5% level and t statistics is 2.644. It indicates that female management boards have a negative effect on innovation performance. Thus, the higher the number of females on the management board, the lower the rate of innovation per 72 mance. The possible argumentation is that the female on the management board would limit the financial resources invested for innovation due to the perception of the high investment risk. Therefore, it reduces innovation activities. However, women on the 21 vernance board are effective for accounting quality, ethical and social responsibility of companies. This finding is not consistent with the finding of (Rejeb et al., 2020; Torchia, Calabrò, Gabaldon, and Kanadli, 2018), which documented a positive of females on organization performance. However, women on board success moderated the 22 lationship between board role and company innovation (Rejeb et al., 2020). Also, Ruiz-Jimenez et al. (2016) found no association between women on board and company innovation.

This study finds an insignificant relationship between the educational background of the management board and innovation performance. This 149 lt is supported by the prior research of (Issa et al., 2021). They find that the education ba73 ground of the management board has no significant impact on bank performance listed in the MENA (the Middle East and North Africa) countries. A high level of management boards' education may benefit creating innovation and information but is not the case in increasing the quality of strategic taken by management board in Indonesians' companies. For the 15 rd hypothesis, this research found that Chinese ethnic in management board also does not benefit in increasing innovation performance. This result is opposite to the prior finding of (Zaitul et al., 2021), who find that ethnic diversity has a negative impact on international decisions. And this is the first study that includes the Chinese ethnic on the management board as a predictor of company innovation performance.

Regarding control variables, family ownership seems to be a critical variable in increasing

innovation performance. Contradict to the argumentation of (Asensio-López et al., 2019) that family owners have an information advantage and better understand the R&D presect value and risk. Therefore, to maintain the certain future performance or the next generation, it is difficult for them to diversify their risk (Tsao et al., 2014). They prefer to invest less in the R&D project and reduce the innovation performance. The possible argumentation of positive effect is that many of family firm is the hand of descendant. Thus, they see R&D risk differently compared to the founder. So, they like to invest in R&G project to maintain the future sustainability. The second control variable (Foreign ownership) do not have a significant effect on company innovation. Even though there is an argumentation that foreign owner bring an advanced techniques, knowledge and management resources to the company 77 nd these resources will improve the company performance, including the innovation performance (Asensio-López et al., 2019). However, this is not the case for an Indonesia's company.

The results in Table 4 show t 33 company size has a positive and significant impact on innovation performance. This finding is in line with provious studies (Aggarwal et al., 2012; Balsmeier et al., 2017; Chen et al., 2016; Li & Yang, 2019; Li et al., 2019; Lodh et al., 2014; Sarto et al., 2019; Wei et al., 2019). It implies that a large company tends t 55 ave higher innovation performance due to the large resources. In addition, the company leverage has a positive effect on company innovation performance. This finding is supported by previous studies (Chi et al., 20 33); Kang et al., 2017; Sarto et al., 2019). But it has a contrasting result (negative effect) compared to previous studier (Balsmeier et al., 2017; Y. Li et al., 2019; Wei et al., 2019). Finally, the company profitability also has a positive relationship with the company innovation performance (60 This finding is consistent with the previous studies (Chi et al., 2019b; Kang et al., 2017) and differ with the finding of Li et al. (2019) and Wei et al. 2019) who conclude that there is a negative effect of company profitability and company innovation performance.

#### CONCLUSIONS AND SUGGESTION

Nowadays, a company has to innovate products or services to sustain a competitive advantage. The company should have an innovative process and active research and development function. The previous study paid less atten 46 n to Indonesia, where a unique Continental Europe Corporate Governance system is applied. This study investigated the relationship between the management board c 30 acteristics and innovation performance. The results show that only females in management boards have a significant effect on innovation performance. I 170 ddition, the impact of females on management boards on innovation performance was negative. This finding implies that females on the management board tend to limit the financial resources invest in R&D projects and reduce the innovation activities. Higher innovation performance can result from higher family ownership, higher company profitability, higher company leverage, and a larger company. This finding enriches the resources dependence theory. This study uses a limited sample. Future research can add the number of samples to get a robust result. Furthermore, future investigations can look at innovation performance from other perspectives, such as the resource-based or agency perspective.

#### REFERENCES

- Aggarwal, R. A. J., Cao, J., & Chen, F. (2012). Information Environment, Dividend Changes, and Signaling: Evidence from ADR Firms. *Contemporary Accounting Research*, 29(2), 403–431. https://doi.org/10.1111/j.1911-3846.2011.01101.x
- Asensio-López, D., Cabeza-García, L., & González-Álvarez, N. (2019). Corporate governance and innovation: a theoretical review. *European Journal of Management and Business Economics*, 28(3), 266–284. https://doi.org/10.1108/EJMBE-05-2018-0056
- Auh, S., & Menguc, B. (2005). Top management team diversity and innovativeness: The moderating role of interfunctional coordination. *Industrial Marketing Management*, 34, 249–261. https://doi.org/10.1016/j.indmarman.2004.09.005
- Balsmeier, B., Buchwald, A., & Stiebale, J. (2014). Outside directors on the board and innovative firm performance. *Research Policy*, 43, 1800–1815. https://doi.org/10.1016/j.respol.2014.06.003

- Balsmeier, B., Fleming, L., & Manso, G. (2017). Independent boards and innovation. *Journal of Financial Economics*, 123(3), 536–557. https://doi.org/10.1016/j.jfineco.2016.12.005
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. In *Journal of Management* (Vol. 17, Issue 1, pp. 99–120). https://doi.org/10.1177/014920639101700108
- Chao, S., Jian, J., & Xin, G. (2017). Empirical analusis of corporate governance and innovation performance in solar photovoltaic enterprise. *Light & Enggineering*, 25(3), 57–64.
- Chatterji, a., Listokin, S., Ringov, D., Zollo, M., Purdy, J. M., Gray, B., Marcus, J., Kurucz, E. C., Colbert, B. a., Yang, X., Rivers, C., Bondy, K., Moon, J. J. J., Matten, D., Wang, Z., Zhang, X., Wang, R., Kang, H., Qiao, B., ... Jones, M. T. (2013). Integrated and decoupled corporate social performance: Management ... Journal of Business Ethics, 66(1), 1–9. https://doi.org/10.5465/AMR.2007.24345254
- Chen, C., Lin, B., Lin, Y., & Hsiao, Y. (2016). Ownership structure, independent board members and innovation performance: A contingency perspective. *Journal of Business Research*, 69(9), 3371–3379. https://doi.org/10.1016/j.jbusres.2016.02.007
- Chen, J., Leung, W. S., & Evans, K. P. (2018). Female board representation, corporate innovation and firm performance. *Journal of Empirical Finance*, 48, 236–254. https://doi.org/10.1016/j.jempfin.2018.07.003
- Chi, J., Liao, J., & Yang, J. (2019a). Institutional stock ownership and firm innovation: Evidence from China. *Journal of Multinational Financial Management*, 50, 44–57. https://doi.org/10.1016/j.mulfin.2019.04.003
- Chi, J., Liao, J., & Yang, J. (2019b). Institutional stock ownership and firm innovation: Evidence from China. *Journal of Multinational Financial Management*, 50, 44–57. https://doi.org/10.1016/j.mulfin.2019.04.003
- Choi, J. J., Park, S. W., & Yoo, S. S. (2007). The Value of Outside Directors: Evidence from Corporate Governance Reform in Korea. *Journal of Financial & Quantitative Analysis*, 42(4), 941–962. https://doi.org/10.2307/27647330
- Claessens, S., Djankov, S., & Lang, L. H. P. (2000). The separation of ownership and control in East Asian Corporations. *Journal of Financial Economics*, 58, 81–112.
- Colpan, A. M., & Yoshikawa, T. (2012). Performance Sensitivity of Executive Pay: The Role of Foreign Investors and Affiliated Directors in Japan. Corporate Governance An International Review, 20(6), 547–561.
- Daily, C. M., Certo, S. T., & Dalton, D. R. (2000). The future of corporate women: Progress toward the executive suite and the boardroom? In Women on corporate boards of directors: International challenges and opportunities (pp. 11–23). Kluwer Academic Publishers.
- Darmadi, S. (2013). Do women in top management affect firm performance? Evidence from Indonesia. Corporate Governance: The International Journal of Business in Society, 13(3), 288–304. https://doi.org/10.1108/CG-12-2010-0096
- Darmadi, S. (2016). Ownership concentration, family control, and auditor choice: Evidence from an emerging market. *Asian Review of Accounting*, 24(1), 19–42.
- Diaz-Fernandez, M., Bornay-Barrachina, M., & Lopez-Cabrales, A. (2017). HRM practices and innovation performance: a panel-data approach. *International Journal of Manpower*, 38(3), 354– 372. https://doi.org/10.1108/IJM-02-2015-0028
- Farrell, K. A., & Hersch, P. L. (2005). Additions to corporate boards: The effect of gender. Journal of Corporate Finance, 11(1-2), 85-106. https://doi.org/10.1016/j.jcorpfin.2003.12.001
- Grubbs, F. F. (1969). Procedures for Detecting Outlying Observations in Samples. *Tachometric*, 11(1), 1–21.
- Gujarati, D. (1995). Basic Econometric. McGraw-Hill.
- Hair, J. F., William, C., Babin, B. J., & Anderson, R. E. (2014). Multivariate Data Analysis (7th Editio). Pearson Education Limited.
- Hillman, A. M. Y. I., & Dalziel, T. (2003). Boards of Directors and Firm Performance: Integrating Agency and Resource Dependence Perspectives. Academy of Management Review, 28(3), 383–396. https://doi.org/10.5465/AMR.2003.10196729
- Ilona, D., Zaitul, & Ethika. (2019). Supervisory board and company borrowing: the case of developing economics. *Journal of Reviews on Global Economics*, 8, 730–738.

- Issa, A., Yousef, H., Bakry, A., Hanaysha, J. R., & Sahyouni, A. (2021). Does the board diversity impact bank performance in the MENA countries? A multilevel study. *Corporate Governance (Bingley)*, 21(5), 865–891. https://doi.org/10.1108/CG-06-2020-0222
- Jajja, M. S. S., Kannan, V. R., Brah, S. A., & Hassan, S. Z. (2017). Linkages between firm innovation strategy, suppliers, product innovation, and business performance: Insights from resource dependence theory. *International Journal of Operations & Production Management*, 37(8), 1054–1075.
- Jensen, M., & Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. https://doi.org/10.1017/CBO9780511817410.023
- Kang, J., Liu, W., Low, A., & Zhang, L. (2017). Friendly Boards and Innovation. Journal of Empirical Finance, 45, 1–25. https://doi.org/10.1016/j.jempfin.2017.09.007
- Kuo, H., Wang, L., & Yeh, L. (2017). The role of education of directors in in fl uencing fi rm R & D investment. Asia Pacific Management Review, 30, 1–13. https://doi.org/10.1016/j.apmrv.2017.05.002
- Kuo, H., Wang, L., & Yeh, L. (2018). The role of education of directors in influencing firm R&D investment. Asia Pacific Management Review, 23(2), 108–120. https://doi.org/10.1016/j.apmrv.2017.05.002
- La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (1999). Corporate Ownership Around the World. The Journal of Finance, 54(2), 471–517. https://doi.org/10.1111/0022-1082.00115
- Li, M., & Yang, J. (2019). Effects of CEO duality and tenure on innovation. *Journal of Strategy and Management*, 12(4), 536–552. https://doi.org/10.1108/JSMA-04-2019-0049
- Li, Y., Liu, Y., & Xie, F. (2019). technology directors and firm innovation. *Journal of Multinational Financial Management*, 50, 76–88. https://doi.org/10.1016/j.mulfin.2019.04.001
- Liu, X., Shen, M., Ding, W., & Zhao, X. (2017). Tie strength, absorptive capacity and innovation performance in Chinese manufacturing industries. *Nankai Business Review International*, 8(4), 475–494. https://doi.org/10.1108/NBRI-01-2017-0002
- Lodh, S., Nandy, M., & Chen, J. (2014). Innovation and Family Ownership: Empirical Evidence from India. Corporate Governance: An International Review, 22(1), 4–23. https://doi.org/10.1111/corg.12034
- Luo, J. hui, Peng, C., & Zhang, X. (2020). The impact of CFO gender on corporate fraud: Evidence from China. *Pacific Basin Finance Journal*, 63, 101404. https://doi.org/10.1016/j.pacfin.2020.101404
- Manning, M. L., & Munro, D. (2004). The business survey researcher's SPSS cookbook (2nd ed). Pearson Education.
- Mascena, K. M. C. de, Barakat, S. R., Isabella, G., & Fischmann, A. A. (2020). The Influence of Board Structure and Ownership Concentration on GRI Reporting. REVISTA BRASILEIRA DE GESTÃO DE NEGÓCIO; 2020: AHEAD OF PRINT, 1–20. https://doi.org/10.7819/rbgn.v0i0.4065
- Melmusi, Z., Ilona, D., Elfiswandi, & Kurniawan, A. (2019). Do Diversity of Directors Improve Market Performance. *The First Economics, Law, Education and Humanities International Conference*, 2019, 125–136. https://doi.org/10.18502/kss.v3i14.4303
- Midavaine, J., Dolfsma, W., & Aalbers, R. (2016). Board diversity and R & D investment. Management Decision, 54(3), 558–569.
- Muthuveloo, R., Chiek, K. C., & Ping, T. A. (2017). An Empirical Analysis of the Perceived Skills in Predicting Managerial Effectiveness: The Malaysian Perspective. *Global Business and Management Research: An International Journal*, 9(4s), 41–60.
- Peterson, C. A., & Philpot, J. (2007). Women's roles on U.S. Fortune 500 boards: Director expertise and committee memberships. *Journal of Business Ethics*, 72(2), 177–196. https://doi.org/10.1007/s10551-006-9164-8
- Powell, W. W., Koput, K. W., & Smith-doerr, L. (1996). Interorganizational and the collaboration and the locus of innovation: networks of learning in Biotechnology. *Administrative Science Quarterly*, 41(1), 116–145.
- Rejeb, W. Ben, Berraies, S., & Talbi, D. (2020). The contribution of board of directors' roles to ambidextrous innovation: Do board's gender diversity and independence matter? *European*

- Journal of Innovation Management, 23(1), 40-66. https://doi.org/10.1108/EJIM-06-2018-0110
- Ruiz-Jimenez, J. M., Fuentes-Fuentes, M. del M., & Ruiz-arroyo, M. (2016). Knowledge Combination Capability and Innovation: The Effects of Gender Diversity on Top Management Teams in Technology-Based Firms. *Journal of Business Ethics*, 135(3), 503–515. https://doi.org/10.1007/s10551-014-2462-7
- Sarto, F., Saggese, S., Viganò, R., & Mauro, M. (2019). Human capital and innovation: mixing apples and oranges on the board of high-tech firms. *Management Decision*, 58(5), 897–926. https://doi.org/10.1108/MD-06-2017-0594
- Sekaran, U. (2013). Reserch Methods For Business.
- Singh, D. A., & Gaur, A. S. (2013). Governance Structure, Innovation and Internationalization: Evidence From India. *Journal of International Management*, 19(3), 300–309. https://doi.org/10.1016/j.intman.2013.03.006
- Srinidhi, B., Gul, F. A., & Tsui, J. (2011). Female directors and earnings quality. Contemporary Accounting Research, 28(5), 1610–1644. https://doi.org/10.1111/j.1911-3846.2011.01071.x
- Talke, K., Salomo, S., & Rost, K. (2010). How top management team diversity affects innovativeness and performance via the strategic choice to focus on innovation fields. *Research Policy*, 39(7), 907–918. https://doi.org/10.1016/j.respol.2010.04.001
- Teixeira, A. A. C., & Bezerra, L. (2016). Innovation performance in service companies and KIBS visà-vis manufacturing: the relevance of absorptive capacity and openness. *REVISTA BRASILEIRA DE GESTÃO DE NEGÓCIOS*, 18(59), 43–66. https://doi.org/10.7819/rbgn.v18i59.2215
- Torchia, M., Calabrò, A., Gabaldon, P., & Bogac, S. (2018). Women directors contribution to organizational innovation: A behavioral approach. *Scandinavian Journal of Management*, 34(2), 215–224. https://doi.org/10.1016/j.scaman.2018.02.001
- Torchia, M., Calabrò, A., Gabaldon, P., & Kanadli, S. B. (2018). Women directors contribution to organizational innovation: A behavioral approach. *Scandinavian Journal of Management*, 34(2), 215–224. https://doi.org/10.1016/j.scaman.2018.02.001
- Ujunwa, A., Okoyeuzu, C., & Nwakoby, I. (2012). Corporate board diversity and firm performance: Evidence from Nigeria. *Review of International Comparative Management*, 13(4), 606–620. https://doi.org/10.22495/cocv9i2c1art6
- Wei, Y., Kang, D., & Wang, Y. (2019). Geography, culture, and corporate innovation. *Pacific-Basin Finance Journal*, 56, 310–329. https://doi.org/10.1016/j.pacfin.2019.06.010
- Wellalage, N. H., Locke, S., & Scrimgeour, F. (2012). The Global Financial Crisis Impact on Ethnic Diversity of Sri Lanka Boards. *Asian Journal of Finance & Accounting*, 4(1), 52–69. https://doi.org/10.5296/ajfa.v4i1.1243
- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48(4), 817–838.
- Zahra, S. A., & Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, 15(2), 291–334. https://doi.org/0803973233
- Zaitul, & Ilona, D. (2018). Gender in Audit Committee and Financial Reporting Timeliness: the Case of Unique Continental European Model. *International Journal of Engineering & Technology*, 7(2.29), 436–442. https://doi.org/10.14419/ijet.v7i2.29.13668
- Zaitul, & Ilona, D. (2019). Tax Aggressiveness and Politically Connected Company. *The 1st Economics, Law, Education and Humanties International Conference*, 2019, 10–19. https://doi.org/10.18502/kss.v3i14.4294
- Zaitul, Melmusi, Z., & Ilona, D. (2021). Board Governance Diversity and the International Decision of Indonesia's Service Companies. Estudios de Economia Aplicada, 39(4). https://doi.org/10.25115/eea.v39i4.4309
- Zheng, S., Li, H., & Wu, X. (2013). Network resources and the innovation performance. *Management Decision*, 51(6), 1207–1224. https://doi.org/10.1108/MD-02-2012-0102

11

## Jurnal\_Pendidikan\_Ekonomi\_Bisnis\_2021\_Rev\_10-10-21\_no\_colour.pdf

ORIGINALITY REPORT

25% SIMILARITY INDEX

20%
INTERNET SOURCES

16%
PUBLICATIONS

4%

STUDENT PAPERS

#### **PRIMARY SOURCES**

Submitted to Universitas Negeri Jakarta
Student Paper

3%

link.springer.com

1 %

journal.unj.ac.id

1 %

knepublishing.com
Internet Source

1 %

www.repository.trisakti.ac.id

1 %

Ying Teng, Eli Gimmon, Wentong Lu. "Do Interlocks Lead to the Convergence of Interfirm Innovation Performance? Evidence From China", SAGE Open, 2021

1 %

Publication

worldwidescience.org

Internet Source

%

8

www.emerald.com

Internet Source

		%
9	ijrcm.org.in Internet Source	1 %
10	journalofbusiness.us Internet Source	1 %
11	Aladdin Dwekat. "The Impact of Audit Committee Characteristics on Corporate Social Responsibility Disclosure", Universitat Politecnica de Valencia, 2021	1 %
12	ejournal.upi.edu Internet Source	1%
13	Mukhlizul Hamdi, Desi Ilona, N.A. Zaitul. "Supervisory board and Indonesia's company internationalisation", International Journal of Business and Globalisation, 2021 Publication	1 %
14	www.tandfonline.com Internet Source	1%
15	Arun TM, Rojers P. Joseph. "Gender and firm innovation - A systematic literature review and future research agenda", International Journal of Entrepreneurial Behavior & Research, 2020	<1%

16	Desi Ilona, Zaitul Zaitul, Ethika Ethika. "Supervisory Board and Company Borrowing: The Case of Developing Economics", Journal of Reviews on Global Economics, 2019 Publication	<1%
17	Ettore Croci. "The Board of Directors", Springer Science and Business Media LLC, 2018 Publication	<1%
18	onlinelibrary.wiley.com Internet Source	<1%
19	www.ijrte.org Internet Source	<1%
20	Hsien-Chang Kuo, Lie-Huey Wang, Li-Jen Yeh. "The role of education of directors in influencing firm R&D investment", Asia Pacific Management Review, 2017 Publication	<1 %
21	Zaitul Zaitul, Zerni Melmusi, Desi Ilona. "Corporate Governance and Bank Performance: Global Financial Crisis 2008", Journal of Reviews on Global Economics, 2019 Publication	<1%
22	researchcommons.waikato.ac.nz Internet Source	<1%
23	rbgn.emnuvens.com.br Internet Source	<1%

24	tel.archives-ouvertes.fr Internet Source	<1%
25	Themistokles Lazarides, Evaggelos Drimpetas, George Kyriazopoulosr. "MERGERS, LIQUIDATIONS AND BANKRUPTCIES IN THE EUROPEAN BANKING SECTOR", Risk Governance and Control: Financial Markets & Institutions, 2015 Publication	<1%
26	garuda.ristekdikti.go.id Internet Source	<1%
27	westminsterresearch.westminster.ac.uk Internet Source	<1%
28	Submitted to Heriot-Watt University Student Paper	<1%
29	journalarticle.ukm.my Internet Source	<1%
30	www.emeraldinsight.com Internet Source	<1%
31	www.virtusinterpress.org Internet Source	<1%
32	Submitted to Radboud Universiteit Nijmegen Student Paper	<1%
33	Sohail Ahmad Javeed, Rashid Latief, Tao Jiang, Tze San Ong, Yongjun Tang. "How	<1%

environmental regulations and corporate social responsibility affect the firm innovation with the moderating role of Chief executive officer (CEO) power and ownership concentration?", Journal of Cleaner Production, 2021

Publication

34	psasir.upm.edu.my Internet Source	<1%
35	quest.edu.np Internet Source	<1%
36	www.growingscience.com Internet Source	<1%
37	Duygu Seckin-Halac, Ece Erdener-Acar, Yasemin Zengin-Karaibrahimoglu. "Ownership and corporate social responsibility: "The power of the female touch"", European Management Journal, 2021	<1%
38	Kun Su. "The Inner Structure of Pyramid and Capital Structure: Evidence from China", Economics: The Open-Access, Open- Assessment E-Journal, 2015 Publication	<1%
39	Cesmaa.org Internet Source	<1%

40	Internet Source	<1 %
41	sciedu.ca Internet Source	<1%
42	theses.ubn.ru.nl Internet Source	<1%
43	uwe-repository.worktribe.com Internet Source	<1%
44	www.apconference.org Internet Source	<1%
45	Angelo O. Burdeos. "Earnings management, corporate governance, and ownership structure of Philippine initial public offerings", Corporate Ownership and Control, 2021 Publication	<1%
46	Li-Jen Yeh, Hsien-Chang Kuo. "Board Capitals, R&D and Leverage Strategies on Financial Performance", Business and Economic Research, 2021	<1%
47	Mario Ossorio. "chapter 8 Corporate Governance and Firm Innovation", IGI Global, 2020 Publication	<1%
48	Moncef Guizani, Gaafar Abdalkrim. "Ownership structure, board independence	<1%

# and auditor choice: evidence from GCC countries", Journal of Accounting in Emerging Economies, 2021

Publication

49	Zsolt Lakatos. "Do larger boards improve shareholder value creation? – Effects of the board size on business performance in Eastern Central Europe", Society and Economy, 2020 Publication	<1%
50	d34df6c9-e870-4b97-b13e- 2e9b59a8e63e.filesusr.com Internet Source	<1%
51	livrepository.liverpool.ac.uk Internet Source	<1%
52	mafiadoc.com Internet Source	<1%
53	ro.uow.edu.au Internet Source	<1%
54	sciencepubco.com Internet Source	<1%
55	www.cambridge.org Internet Source	<1%
56	www.ccfr.org.cn Internet Source	<1%

www.doria.fi

Corporate Governance: The International

Journal of Business in Society, 2019

Publication

63	Rim Zouari-Hadiji, Ghazi Zouari. "A mediation analysis: Board of directors' composition, R&D investment, and international firm performance", Corporate Ownership and Control, 2021 Publication	<1%
64	Salim Darmadi. "Do women in top management affect firm performance? Evidence from Indonesia", Corporate Governance: The international journal of business in society, 2013 Publication	<1%
65	clok.uclan.ac.uk Internet Source	<1%
66	dr.ntu.edu.sg Internet Source	<1%
67	dro.deakin.edu.au Internet Source	<1%
68	econference.stkip-pgri-sumbar.ac.id	<1%
69	lib.ui.ac.id Internet Source	<1%
70	scitecresearch.com Internet Source	<1%
71	usir.salford.ac.uk Internet Source	<1%

72	wp.hse.ru Internet Source	<1%
73	www.agba.us Internet Source	<1%
74	"Board Directors and Corporate Social Responsibility", Springer Science and Business Media LLC, 2012 Publication	<1%
75	Gianluca Ginesti, Rosanna Spanò, Luca Ferri, Adele Caldarelli. "The chief financial officer (CFO) profile and R&D investment intensity: evidence from listed European companies", Management Decision, 2021 Publication	<1%
76	Guido Migliaccio. "Disabled People in the Stakeholder Theory: a Literature Analysis", Journal of the Knowledge Economy, 2017 Publication	<1%
77	Johana Sierra-Morán, Laura Cabeza-García, Nuria González-Álvarez, Juan Botella. "The board of directors and firm innovation: A meta-analytical review", BRQ Business Research Quarterly, 2021	<1%
78	Joni Joni, Kamran Ahmed, Jane Hamilton. "Politically connected boards, family and	<1%

business group affiliations, and cost of capital:

## Evidence from Indonesia", The British Accounting Review, 2020

Publication

Publication



Walid Ben-Amar, Millicent Chang, Philip McIlkenny. "Board Gender Diversity and Corporate Response to Sustainability Initiatives: Evidence from the Carbon Disclosure Project", Journal of Business Ethics, 2015

<1%

Exclude quotes

Exclude bibliography

Off

Exclude matches

Off