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The Influence of Director Expertise and Executive Expertise on Firm Performance (An Empirical Study of the Two-tier Board System in Indonesia)

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ABSTRACT

This research aimed to assess the influence of the expertise of boards of directors and executives on manufacturing companies' performances in Indonesia. The independent variable set was Director and Executive Expertise measured by the proportion of board members who have academic degrees (graduate and postgraduate) and professional certifications in business and finance, while the dependent variable was Firm Performance measured by Return on Assets, Return on Equity, and Tobin's Q. The objects of research were manufacturing companies in Indonesia, whose data were obtained from the website of the Indonesia Stock Exchange in 2014-2018. Separate regression analysis of data was performed for each group of board members. The study found that academic degrees and professional certifications in business or finance held by directors and executives did not affect Firm Performance across all proxies because, among others, most companies in Indonesia were family-owned. As the implications, companies can consider Director Expertise as a necessary thing for improving their performances. Members of boards who have more relevant expertise, experiences, knowledge, and skills can develop decision-making and drive more strategy in making more decisions to solve problems and improve their firms' performances.

Keywords: *Director Expertise, Executive Expertise, Firm Performance, Two-tier Board System*

INTRODUCTION

Company owners are now facing challenges which get more complicated internally and externally, encouraging them to have leaders equipped with relevant expertise. The current company management style, which separates the manager from the owner (Berle & Means, 1932), aims for each party to work professionally while keeping conflicts of interest low. The responsibility of managers to manage the owners' assets becomes the top issue. Great responsibilities with many resources to be managed need a proper management. The bankruptcies of some large companies in Indonesia, like PT Sariwangi Agricultural Estates Agency (Sariwangi A.E.A) and PT Nyonya Meneer, or in the world, such as MGM, Marvel entertainment, Kodak, Nokia, and others, were caused by inaccuracies in financial management and, also, in the selection and implementation of business strategy. The expertise for managing companies related to the companies' future requires managers to be more dynamic in making business strategy decisions under any conditions.

In Indonesia, companies put CEOs on the payroll based on their expertise, experiences, and skills of creating values for their investors (Harymawan, Nasih, Ratri, & Nowland, 2019). Indonesia's manual for Corporate Governance as part of the "Governance Roadmap," based on the regulation number 21/POJK.04/2015 and the circular letter number 32/SEOJK.04/2015, which were issued in June 2018, states that companies should disclose and demonstrate the expertise, knowledge, and experience that will be required for the effective functions of both boards of commissioners and directors. In particular, companies should ensure that their directors responsible for accounting and finance have knowledge or expertise in these areas. It is to ensure that the directors and commissioners have the understanding and ability to manage company finances. Suggestions for improvement in the governance roadmap are not yet an obligation for company owners to implement but a form of improving corporate governance to protect stakeholders and help shape a better investment climate. For this reason, the influences of both boards' expertise on the capital structure in Indonesia, a developing country with a relatively lower Human Development Index (HDI), are examined.

Director expertise is part of the mechanism in corporate governance that affect Firm Performance (Bauwhede, 2009; Chen, Cheung, Stouraitis, & Wong, 2005; Connelly, Limpaphayom, & Nagarajan, 2012). Director expertise is considered a better body in providing oversight across departments in the long term (Bart & Turel, 2009). Director expertise, as an integral element in governance systems in companies, play a multi-role function in monitoring and advising top management (Adams, Hermalin, & Weisbach, 2010; Adams & Ferreira, 2007; Harymawan *et al*., 2019). Companies hire CEOs (in Indonesia called president directors) based on their expertise, experiences, and capacity of creating values for shareowners (Harymawan *et al*., 2019). The two models of board structures are the one-tier and the two-tier systems; Indonesia applies the second. The first model is applied in England, Australia, New Zealand, and other Commonwealth member countries. This model does not separate the membership of executive expertise and director expertise. According to the regulation number 33/POJK.04/2014, the two-tier system separates executive expertise, which is owned by directors, from director expertise, the one of commissioners. Boards of commissioners in countries that adopt the two-tier system have the same function as board of directors, while board of directors serves the function of top management team. To be consistent with terminologies applied in one-tier system countries, for the remainder of this research, board of commissioners is referred to as board of directors, and board of directors is referred to as executives, following the research conducted by Harymawan *et al*., 2019.

Highly qualified board members are better in management and a resource more valuable for a company (Jermias & Gani, 2014). Expertise is certainly needed in a company's strategy process, decision-making, strategy implementation, and strategy evaluation process. So that it will bring up opportunities and threats for companies that make companies to be swift and precise in determining steps or decisions (Laksana, Apriliado, & Kusmantini, 2022). Therefore, those who are geared with better compatibilities in expertise, experience, knowledge, and ability can generate more inputs for problems and firm performance handling (Hillman & Dalziel, 2003).

Upper Echelon theory was used to examine relationships connecting board expertise to firm performance. This postulate argues that an entity's outcomes, such as the strategy chosen and the level of performance, are influenced by its leader's characteristics. These leadership characteristics include various things, such as age, work experience, educational background, socio-economic background, and others. The results of research in the private sector confirmed the Upper Echelon theory that CEO characteristics play a critical role in firm performance (Fathonah, 2019; Herizona & Yuliana, 2020; Noorkhaista & Sari, 2017). The process of corporate or organizational strategy is inseparable from the involvement of individuals in the organization. Values and cognitive expertise of influential people chaired the top management are crucial in determining organizational consequences to be investigated empirically.

Based on the explanation above, this study's purpose was to determine the correlation of Director Expertise and Executive Expertise with the Firm Performance of companies listed on the Indonesia Stock Exchange. This research would be quite important and different from previous studies, besides helping to expand the literature review for existing research. *First*, it aimed to provide factual proofs about the influences of Director Expertise and Executive Expertise of manufacturing companies on Firm Performance and, second, about how the portions of Return on Assets, Return on Equity, and Tobin's Q are in testing the influences of Director Expertise and Executive Expertise on Firm Performance. *Thirdly*, this study expanded the literature that had examined Board Expertise in developing countries to provide an overview of business competition. Based on this research, the companies studied were expected to consider the presence of Director Expertise deemed necessary for improving Firm Performance. Members of the board possessing more relevant industrial expertise, experience, knowledge, and skills would be able to come up with more decisions to address problems regarding Firm Performance and to enhance it.

Starting from the explanation above, the manufacturing industry in Indonesia provides an interesting background. Indonesia is a country with great economic potential. Being the biggest economy in Southeast Asia and the 17th globally, the country is also Asia's major emerging capital market that is appealing for global investment. Since the global financial crisis in 1998 and 2008, it has implemented several governance reforms, including the establishment of the OJK (Indonesia's financial service authority) in 2011. Despite the global financial crisis, the Jakarta Composite Index (JCI) reached its peak in 2013, showing that the Indonesia's government was getting better. One of the characteristics of capital markets in developing countries is the high concentration of family property (Krishnamurti, Sĕvić, & Šević, 2005). Such characteristic is also found in Indonesia. Poor investor protection, disclosure requirements, and markets for corporate governance are also characteristics of markets in developing countries (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). Because of the high family control level, some directors were hired on the basis of kinship with founders or controlling shareholders, not of their expertise and experience (Westhead & Cowling, 1998). In addition, Indonesia is

in demand as the country is a developing one but adopting a system that involves both boards of supervisors and managers.

This research analyzed data of all manufacturing firms registered in the Indonesia Stock Exchange. Here data in forms of annual reports was used to collect information on the education levels and the professional certifications held by the directors and commissioners. The data were then analyzed by regression by separating them accordingly, either directors or executives. Tobin's Q, Return on Assets (ROA), and Return on Capital (ROE) were used to measure Firm Performance.

LITERATURE REVIEW

The second section of this paper discusses related literatures and states the hypotheses. Then, the third section explains the sample and methodology, enriched with descriptions about variables, model, and methods. The fourth section contains a descriptive study, and the fifth presents the empirical results, while the last one deals with conclusions. In this study, the primary theory, namely the Upper Echelon theory described below, was used.

Upper Echelon Theory

Upper Echelon theory was used to explain the impacts of the expertise of the boards of commissioners and directors on firm performance. The theory, developed by Hambrick and Mason (1984), says that any organization reflects its top management. It reveals that the outcomes of organizational strategy choices and some performance levels are predictable through seeing the managerial background characteristics. Furthermore, the characteristics of the members of the boards, e.g. age, functional skill, and education, have been frequently used to indicate cognitive filters and base values for decision-making (Hambrick & Mason, 1984). The theory looks at people in the highest managerial functions, such as CEOs and top management (Finkelstein, Hambrick, & Cannella, 2009). A CEO or director is responsible for all utilization of existing resources in a company and plays a role in all strategic decision-making.

The Upper Echelons theory is usable as a basis for research needed to explore the characteristics of the members of the boards and the top management because the way companies improve performance reflects the companies' leaders. The traits, method, and performance of the members determine their organization's gains (Finkelstein and Hambrick 1996). The competences and expertise are the characteristics of the boards that can influence firm performance. The conclusions of research conducted by Kakanda, Salim and Chandren, 2017; Kaur, & Singh, 2018; Minton, Taillard, & Williamson, 2014; Unda, Ahmed, & Mather, 2019; Krause, Semadeni and Cannella, 2013, Francis, Hasan, & Wu, 2012; Hau and Thum, 2009 stated that the competence the boards influences firm performance. This study confirmed the theory carried out by Wang, Holmes, Oh and Zhu (2016) that the educational level of top management plays a role in decision making so that it affects firm performance. One of the important and continuously debated decisions is the capital structure-related decision. Such a decision requires expertise and experience that will affect the company's performance.

This study also explains some of the variables used. The following is an explanation of the review literature and the development of research hypotheses:

Firm Performance

Performance in the context of corporation is the ability of a company to organize existing assets for the provision of value for itself. Through such performance, we can measure the company's levels of efficiency and productivity. In addition, firm performance appraisal is also beneficial in determining the extent of a company's development. Performance means the work achievable either individually or collectively according to certain power and accountability for the achievement of their goals without breaching the law or contradicting morality and norms (Rivai & Basri, 2004). It is something created by an organization during a period by referring to applicable standards. The measurements of which aim to predict activity performance and the final results achieved. This study used financial performance to examine firm performance.

Financial Performance

Bastian (2006) describes performance as the achievement of implementation, programs, or policies in bringing forth organizational vision, mission, goals, and objective. Meanwhile, Basri and Gitosudarmo (2002) asserted that financial performance is a series of monetary events during a period of time that are reported in forms of financial statements; they include income statements and balance sheets. The description of a company's financial situation that is analyzed using analytical tools to assess performance during a certain period is called as company performance. This is crucial for the optimal use of resources that helps the company in the brink of environmental changes. The appraisal over financial performance is necessary to ensure that the management has fulfilled its duty to the funders and has achieve the corporate goals.

Performance appraisal is conducted to 1) to estimate the achievements of organizations over certain periods as a reflection of their success in implementing its activities; 2) to evaluate how certain parts contributes to the company's goals as a whole, besides seeing the organization's performance as a whole; 3) to get a foundation from which future strategies are built upon; 4) to guide decision makers, organizational activities, organization divisions in their operation, and; 5) to build foundational layout for investment policies that enhance productivity and efficiency.

Munawir (2000) mentioned that firm performance evaluation seeks to determine 1) company’s liquidity, i.e. the ability to meet any financial obligations, particularly those related with finances, immediately; 2) company’s solvability, i.e. the ability to fulfill its short and long-term financial obligations if the company is liquidated; 3) company’s rentability or profitability, i.e. the ability to make profits within certain period of time; and 4) company’s business stability, i.e. the ability to conduct its operation in a steady manner as indicated by its capacity of paying interest expenses on its debts, including its principal, on time and of paying dividends regularly without having any difficulties or facing crises.

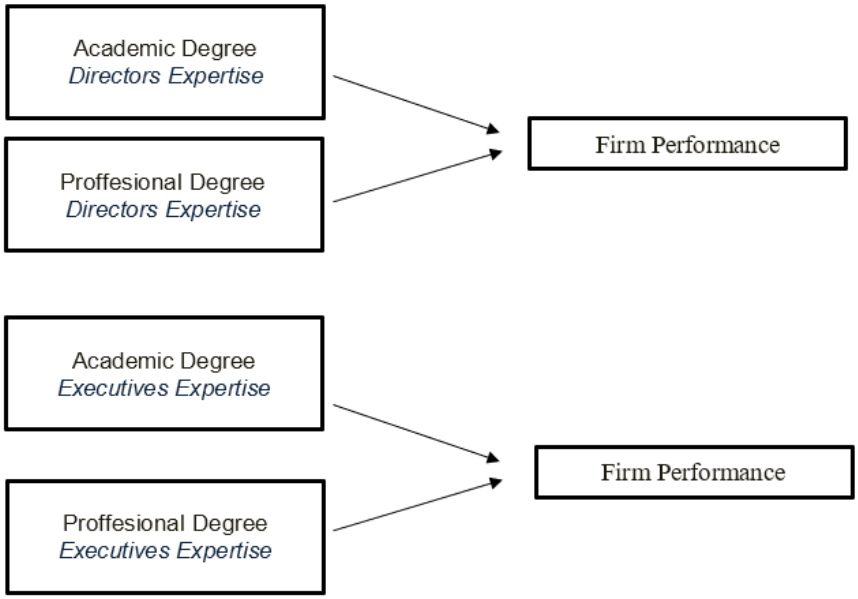
According to agency theory, shareholders let other parties manage their business on their behalf (Smulowitz, Becerra & Mayo,2019). However, in this regulation, interest gaps between shareholders and managers may occur, referred to as agency problems (Smulowitz et al., 2019). Board members are tasked with creating value for shareholders based on their abilities, expertise, and experience (Harymawan et al., 2019). Well-prepared frameworks for corporate governance provide companies with greater access to finance that bears smaller capital costs and higher performance with commending treatments for stakeholders (Claessens, Djankov, & Lang, 2000).

Following previous studies (Bhagat, Bolton, & Subramanian, 2012; Darmadi, 2013), education quality is determined by educational qualifications. Upper Echelon theory explains the link between Director Expertise and Firm Performance and mentions that organization is the reflection of its top management. The theory states that organizational strategy choice outcomes and some performance levels are predictable through managerial background characteristics of age, experience, and education, and they frequently indicate cognitive filters and base values for decision-making (Hambrick, 1986). Upper Echelon is a theory that looks at top management figures, such as CEOs and top management (Hambrick, 1986). The competencies of directors and executives are characteristics that can affect corporate performance (Carnahan *et al*., 2013; Francis *et al*., 2015; Kaur & Singh, 2018; Minton *et al*., 2014; Unda *et al*., 2019).

Several previous researchers have concluded that board competence influences firm performance (Carnahan, Agarwal, & Campbell, 2013; Darmadi, 2013; Francis *et al*., 2015; Harymawan *et al*., 2019; Kaur & Singh, 2018; Minton *et al*., 2014 ; Unda *et al*., 2019). Furthermore, specifically, expert, experienced, knowledgeable, and industrially skilled directors and managers have better abilities in decisions related to problem solving and performance improvement (Hillman & Dalziel, 2003). CEOs or directors with better education are mostly less risk averse and open to creative business ideas because they are well informed about their external environment (Martín & Herrero, 2018) where it can affect performance. This statement is also reinforced by Wang *et al*. (2016), saying that CEOs' schooling positively enhances their strategic corporate measures leading to higher corporate performance in the future. Board members with better education are perceived to be better trained, having substantial cognitive growth, and rich in terms of knowledge foundation. They are also able to intensify organization's performance through their decision-making ability advancement which helps them be more tactical and relevant (Dragoni, Oh, Vankatwyk, & Tesluk, 2011).

Related to the argument about director expertise and executive expertise, there are 4 hypotheses, namely:
Hypothesis 1 : Director's academic degree influences Firm Performance.
Hypothesis 2 : Executive's academic degree influences Firm Performance.
Hypothesis 3 : Director's professional certification influences Firm Performance.
Hypothesis 4 : Executive's professional certification influences Firm Performance.

RESEARCH ROAD MAP



RESEARCH METHOD

This study utilized data on manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the period of 2014-2018. The company data used were panel data by combining time series data and cross-section data. Sources of data came from annual reports, company financial reports, and the ORBIS database with secondary data types. The sample selection criteria applied were: 1) the companies under study must be registered on the IDX and must have published annual reports and financial reports for the period of 2014-2019; 2) data on the variables studied are available; and 3) the sample companies did not experience delisting during the observation period.

The operational variable measurement table used in this study is as follows:

Table 1. Research Variables

Firm-specific Variables		Definition
No.	Dependent Variables : (Firm Performance)	
1)	ROA	Net income/Total assets
2)	ROE	Net income/Total equity
3)	Tobins'Q	The market value of equity is added to total liabilities and then divided by total assets
No.	Independent Variables:	
1)	Director Expertise (Dir_Exp)	
	Dir_Degree	The proportion of the number of commissioners who have a post-graduate degree (Master/Doctoral/Ph.D.)
	Dir_Business.	The proportion of the number of commissioners who have a degree in business certification
2)	Executives Expertise (Exe_Exp)	
	Exe_Degree	The proportion of the number of members of the board of directors who have a postgraduate degree (Master/Doctoral/ Ph.D.)

Firm-specific Variables		Definition
	Exe_Business	The proportion of the number of members of the board of directors who have a business certification degree
	Control Variables:	
1)	Return of Industry (Retind)	The first difference of the natural logarithm of the price index.
2)	Firm size (FS)	The natural logarithm of total assets.
3)	Firm age (FAGE)	The natural logarithm of the number of years since the firm was listed.
4)	Capital investment (CAINV)	The ratio of capital expenditure to one-period lagged total assets.
5)	The current ratio (CR)	The ratio of current assets to current liabilities.
6)	The market-to-book ratio (MBV)	The ratio of the market value of common equity to the book value of common equity.
7)	The cash flow to total assets ratio (NCFOTA)	The ratio of net cash flow from operating to total assets.
8)	The fixed assets ratio (FAR)	The ratio of net property, plant, and equipment to total assets.

The dependent variable in this study was Firm Performance as used in previous research (Harymawan *et al*., 2019; Kaur & Singh, 2018; Unda *et al*., 2019). This study used Return on Equity (ROE) , Return on Assets (ROA), and Tobin's Q to measure Firm Performance. The independent variables in this study were Director Expertise and Executive Expertise. Director Expertise (Dir-Exp) was measured using the proportion of the number of the commissioners who had post-graduate degrees (Master/Doctoral/Ph.D.) (Dir_Degree) and the number of the commissioners who had degrees in business/finance (Dir_Business). Executive Expertise was measured using the proportion of the number of members of the board of directors (Exe-Exp). It was measured using the proportion of the number of members of the board of directors who had a postgraduate degree (Master/Doctoral/Ph.D.) (Exe_Degree) and the number of members of the commissioners who had degrees in business/finance (Exe_Business). This measurement was in line with previous research (Darmadi, 2013).

This study used control variables based on research by Detthamrong, Chancharat, and Vithessonthi (2017) and Frank and Goyal (2009). Control variables function to reduce concerns arising from omitted variables that might affect Firm Performance. In this study, the control variables were measured using return of industry (Retind) as a control of industry level, firm size (FS), firm age (FAGE), capital investment (CAINV), current ratio (CR), market-to-book value ratio (MBV), cash flow to total assets ratio (NCFOTA), and fixed asset ratio (FAR), as firm-specific control variables. In line with previous research (Chen *et al*., 2005; Detthamrong *et al*., 2017); (Field & Mkrtchyan, 2017; García-Meca, García-Sánchez, & Martínez-Ferrero, 2015; Harymawan & Nowland, 2016), firm size (FS) was measured using the natural logarithm of total assets. Firm age (FAGE) was calculated by the natural logarithm of the number of years since the company was registered. It was used as an indicator of the company's experience in running its business. Older companies tended to have good organizations in terms of structure, processes, and systems, while new or younger ones tended to be less rigid in their organizational structures.

To control for the impact of company investment on Firm Performance, we employed capital investment (CAINV), which is the ratio of one-period-behind capital expenditure to total assets. To capture the company's investment opportunities, the market-to-book value (MBV) ratio was calculated as the ratio of the market value of general equity to the book value of general equity. Current ratio (CR) was determined by dividing current assets by current liabilities. It determines whether a company has sufficient liquid assets to meet its short-term debt obligations. Cash-rich businesses are better able to absorb liquidity shocks. The cash flow to total assets ratio (NCFOTA), which was calculated as the ratio of net operating cash flows to total assets, was used to control cash on hand. Keefe and Yaghoubi (2016) found that fluctuations in cash flow are detrimental to financial leverage. As in Margaritis and Psillaki's (2010) research, the fixed asset ratio (FAR) was calculated as the ratio of fixed assets to total assets.

The following model equations will be used to answer the research questions and test the hypotheses.

a. To test hypothesis 1 (Director's academic degree influences Firm Performance)

$PERFORMANCE_{\mathrm{it}} = \beta 0 + \beta 1 \mathrm{Dir\_Exp}it + \sum_h \beta_h Control_i$

b. To test hypothesis 2 (Executive's academic degree influences Firm Performance)

$PERFORMANCE_{\mathrm{it}} = \beta 0 + \beta 2 \mathrm{Exe\_Exp}it + \sum_h \beta_h Control_i$

c. To test hypothesis 3 (Director's professional certification influences Firm Performance)

$PERFORMANCE_{\mathrm{it}} = \beta 0 + \beta 1 \mathrm{Dir\_Exp}it + \sum_h \beta_h Control_i$

d. To test hypothesis 4 (Executive's professional certification influences Firm Performance)

$PERFORMANCE_{\mathrm{it}} = \beta 0 + \beta 2 \mathrm{Exe\_Exp}it + \sum_h \beta_h Control_i$

Notes

Dir_exp	: Director Expertise
Exe_exp	: Executive Expertise
Performance	: Firm Performance (ROA, ROE, and Tobins'Q)
Control	: control variable

RESULTS AND DISCUSSION

Descriptive Statistical Test

Table 2, that illustrate the descriptive statistical test, indicates that Firm Performance comprising the Return on Assets (ROA) with the lowest score of 0.00, Return On Equity (ROE), and Tobins'Q had a small values close to 0, indicating that some companies had a relatively small profit. However, if you look at the maximum value, some companies had very high values of Firm Performance, indicating that several companies had fairly high profits. If you look at the average value, all proxies of Firm Performance had highly heterogeneous data in which the standard deviation values were above the mean values.

Table 2. Descriptive Statistics

Statistics	Minimum	Maximum	Mean	Std. Deviation
ROA	0.00	18.92	0.4625	1.67896
ROE	0.02	143.53	15.6215	24.57707
Tobin's Q	0.08	12.96	1.8901	2.32846
Dir_Degree	0.00	1.00	0.3684	0.26652
Dir_Business	0.00	0.80	0.2444	0.22406
Exe_Degree	0.00	0.83	0.2795	0.23926
Exe_Business	0.00	0.83	0.2408	0.22180
Retind	-0.80	0.86	0.3242	0.31183
Firm_Size	1.24	24.86	4.8369	4.71885
Firm_Age	1.00	1.02	1.0099	0.00532
CAINV	1.22	24.61	4.7828	4.66144
CR	0.00	24.49	2.7676	2.72522
MBV	-0.03	82.44	4.0245	9.75624
NCFOTA	-0.12	9323898.00	39176.3535	604378.51988
FAR	0.36	14.17	4.8207	2.70486

Source: Data processed (2022)

All academic degrees and business/finance professional degrees held by directors and executives had the lowest score of 0, indicating the absence of these degrees in some companies. So, formal education and professional certification were not the main points of board expertise. Companies could judge from experience, career, and knowledge other than educational background. Furthermore, based on research by Darmadi (2013), most prominent companies in Indonesia are family-controlled. This statement is reinforced by a survey conducted by PWC in 2014 that found that 95% of companies in Indonesia are family-owned. This situation has brought education and certification of board members not to being the main priority of all companies. However, viewed from the maximum value, many companies still prioritize educational background to match the field the board members are engaged in for having aligned analysis and decisions. Finally, based on the control variables, several variables had highly heterogeneous data in which the standard deviation values were higher than the mean values, such as those of MBV and NCFOTA.

Pearson's Correlation Test

Table 3. Pearson's Correlation of ROA

	1	2	3	4	5	6	7	8	9	10	11	12	13
ROA	1												
Dir_Degree	-0.010	1											
Dir_Business	-0.023	.742**	1										
Exe_Degree	-0.012	.408**	.268**	1									
Exe_Business	-0.001	.442**	.266**	.928**	1								
Retind	-0.036	0.040	-0.011	-0.013	-0.049	1							
Firm_Size	.161*	-0.042	-0.003	-.129*	-.154*	-0.096	1						
Firm_Age	0.076	.204**	.165*	.242**	.213**	-0.065	0.052	1					
CAINV	.161*	-0.043	-0.003	-.129*	-.155*	-0.096	1.000**	0.049	1				
CR	-0.018	0.008	-0.068	0.091	0.009	.203**	0.066	-0.100	0.066	1			
MBV	0.021	.149*	0.043	.280**	.279**	-.279**	-.141*	.359**	-.141*	-0.127	1		
NCFOTA	-0.018	.154*	0.123	0.105	0.125	0.030	-0.030	0.002	-0.030	0.022	-0.025	1	

	1	2	3	4	5	6	7	8	9	10	11	12	13
FAR	-.190**	0.044	0.039	0.113	0.114	-0.081	-.744**	0.020	-.744**	-0.101	.216**	-0.016	1

Notes: ROA, *Return On Assets*; Dir_Degree, the number of members of boards of directors who have academic degrees ; Dir_Business, the number members of boards of directors who have finance/accounting/business degrees; Exe_Degree, the number of members of executives who have academic degrees ; Exe_Business, proportion of members of executives who have finance/accounting/business degrees ; Retind, return of Industry; Firm_Size, firm size; Firm_Age, firm age; CAINV, capital investment; CR, current ratio; MBV, market-to-book ratio; NCFOTA, cash flow to total assets ratio; FAR, fixed assets ratio.

** Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed).

Source: Data processed (2022)

The outcome of Pearson's correlation, as depicted in table 3, show the insignificance effect of the independent variables Executive Expertise and Director Expertise as assessed through both proxies, namely academic degrees and professional degrees in business/finance, on Firm Performance (ROA). This correlation value means that the levels of Executive Expertise and Director Expertise that consist of academic degrees and professional degrees in finance/business were not correlated with Firm Performance (ROA). These findings proved that the educational background and relevant expertise possessed by board members could not determine the level of firm performance. Many other factors were correlated with ROA. Among the control variables, only Firm Size and Capital Investment (CAINV) of 0.161 and 0.161 with a significance level of 0.05, respectively, as well as the flow of cash to total assets ratio (FAR) of -0.190 with a significance level of 0.01 correlated with Firm Performance (ROA). It means that larger companies have higher amount of capital investment, while higher ratio of fixed assets increase the likeliness of a company to create value for shareholders, so that company's better performance can be inferred. Then, it is possible to estimate Firm Performance seen through Return on Equity (ROE) value. Below is an explanation regarding the correlation of Firm Performance (ROE):

Table 4. Pearson's Correlation of ROE

	1	2	3	4	5	6	7	8	9	10	11	12	13
ROE	1												
Dir_Degree	.138*	1											
Dir_Business	0.056	.742**	1										
Exe_Degree	.294**	.408**	.268**	1									
Exe_Business	.276**	.442**	.266**	.928**	1								
Retind	-.307**	0.040	-0.011	-0.013	-0.049	1							
Firm_Size	-0.114	-0.042	-0.003	-.129*	-.154*	-0.096	1						
Firm_Age	.407**	.204**	.165*	.242**	.213**	-0.065	0.052	1					
CAINV	-0.115	-0.043	-0.003	-.129*	-.155*	-0.096	1.000**	0.049	1				
CR	-0.028	0.008	-0.068	0.091	0.009	.203**	0.066	-0.100	0.066	1			
MBV	.852**	.149*	0.043	.280**	.279**	-.279**	-.141*	.359**	-.141*	-0.127	1		
NCFOTA	-0.041	.154*	0.123	0.105	0.125	0.030	-0.030	0.002	-0.030	0.022	-0.025	1	
FAR	.212**	0.044	0.039	0.113	0.114	-0.081	-.744**	0.020	-.744**	-0.101	.216**	-0.016	1

Notes: ROE, Return On Equity; Dir_Degree, the number of members of boards of directors who have academic degrees ; Dir_Business, the number members of boards of directors who have finance/accounting/business degrees; Exe_Degree, the number of members of executives who have academic degrees ; Exe_Business, proportion of members of executives who have finance/accounting/business degrees ; Retind, return of Industry; Firm_Size, firm size; Firm_Age, firm age; CAINV, capital investment; CR, current ratio; MBV, market-to-book ratio; NCFOTA, cash flow to total assets ratio; FAR, fixed assets ratio.

** Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed).

Source: Data processed (2022)

The reading on the Pearson's analysis depicted in Table 4 show that the outcome of the interrelationship of the independent variables here found that academic degrees of Director Expertise and Executive Expertise with the proxies of academic degrees and business/finance professional degrees correlated with Firm Performance (ROE) with

values of 0.138, 0.294, and 0.276. However, of Director Expertise, the degree of certification in the business/finance sector did not show a significant correlation. These results indicated that the results of organizational strategy options and performance at some levels are predictable through the characteristics of the managerial background. CEOs or executives with better education tend to be less risk-averse and may be more open to progressive ideas of business because they are informed more about their external environment (Farag & Mallin, 2018). This situation, of course, can greatly impact the performance of their companies. This statement corresponds to Wang et al. (2016) who stated that CEOs' education in formal institution is certainly correlated with the company's prudent measures and company accomplishment in the future. Executives with better education are perceived to be better trained, having substantial growth in cognitive areas, and rich in supporting knowledge. They might intensify future firm performance through decision-making ability expansion and encouragement toward strategic actions of higher relevance (Dragoni et al., 2011). The control variables that correlated with Firm Performance (ROE) were return of industry (Retind), firm age, the flow of cash to total assets ratio (FAR), and MBV with values of -0.307; 0.407; 0.212; and 0.852, respectively, at 0.01 significance. The interpretation is that the higher the return from industry and MBV, the longer the company has been established, and the greater the proportion of cash flows to total assets, the better the Firm Performance (ROE). Below is the explanation regarding Firm Performance (Tobins'Q) correlation:

Table 5. Pearson's Correlation of *TOBINS'Q*

	1	2	3	4	5	6	7	8	9	10	11	12	13
Tobin's Q	1												
Dir_Degree	0.058	1											
Dir_Business	-0.025	.742**	1										
Exe_Degree	.283**	.408**	.268**	1									
Exe_Business	.273**	.442**	.266**	.928**	1								
Retind	-.435**	0.040	-0.011	-0.013	-0.049	1							
Firm_Size	-.162*	-0.042	-0.003	-.129*	-.154*	-0.096	1						
Firm_Age	.130*	.204**	.165*	.242**	.213**	-0.065	0.052	1					
CAINV	-.162*	-0.043	-0.003	-.129*	-.155*	-0.096	1.000**	0.049	1				
CR	0.039	0.008	-0.068	0.091	0.009	.203**	0.066	-0.100	0.066	1			
MBV	.411**	.149*	0.043	.280**	.279**	-.279**	-.141*	.359**	-.141*	-0.127	1		
NCFOTA	-0.041	.154*	0.123	0.105	0.125	0.030	-0.030	0.002	-0.030	0.022	-0.025	1	
FAR	.220**	0.044	0.039	0.113	0.114	-0.081	-.744**	0.020	-.744**	-0.101	.216**	-0.016	1

Notes: Tobins'Q, Market value of equity plus total liabilities and then divided by total assets; Dir_Degree, the number of members of boards of directors who have academic degrees ; Dir_Business, the number members of boards of directors who have finance/accounting/business degrees; Exe_Degree, the number of members of executives who have academic degrees ; Exe_Business, proportion of members of executives who have finance/accounting/business degrees ; Retind, return of Industry; Firm_Size, firm size; Firm_Age, firm age; CAINV, capital investment; CR, current ratio; MBV, market-to-book ratio; NCFOTA, cash flow to total assets ratio; FAR, fixed assets ratio.
** Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed).

Source: Data processed (2022)

The outcomes of Pearson's analysis in Table 5 show the association results of the independent variables that Executive Expertise with the proxies of academic degrees and business/finance professional degrees correlated with Firm Performance (Tobins'Q) with values of 0.283 and 0.273 with a significance level of 0.01. However, of Director Expertise, both academic and business/finance certification degrees did not show a significant correlation. These results indicated that the results of organizational strategy options and some levels of performance are predictable through the characteristics of managerial background. Highly educated CEOs or executives tend to be less risk averse and more open to inventive ideas because they more informed about external environments (Farag & Mallin, 2018). This situation, of course, greatly affects the

performance of the company. This statement also confirms Wang *et al*. (2016), who stated that professional CEO certification is positively connected with company's strategic moves and future company performance. Leaders with better educational attainment, significant growth in cognitive domain, and knowledge fundamentals can improve later performance through improvements in decision-making processes and encouragement towards strategic actions that are more relevant (Dragoni *et al*., 2011).

Control variables which had a correlation with Firm Performance (Tobins'Q) were return of industry (Retind), firm size, firm age, capital investment (CAINV), flow of cash to total assets ratio (FAR), and MBV. This means that the higher the return of industry and MBV, the larger the company size and the longer it has been in existence, and the greater the capital investment and cash flow ratio to total assets, the better Firm Performance (Tobins'Q).

DISCUSSION

Hypothesis Test

Table 6. Hypothesis Test Results

	ROA			ROE			TOBINS'Q		
	Coef	**Std Err**	**Sig**	**Coef**	**Std Err**	**Sig**	**Coef**	**Std Err**	**Sig**
Dir_Degree	0.025	0.674	0.970	-2.471	4.971	0.620	0.356	0.762	0.641
Dir_Business	-0.236	0.748	0.752	2.038	5.512	0.712	-1.143	0.845	0.177
Exe_Degree	-0.563	1.289	0.662	6.764	9.504	0.477	2.076	1.456	0.155
Exe_Business	0.628	1.409	0.656	-3.107	10.392	0.765	-0.189	1.592	0.906
Retind	-0.158	0.386	0.683	-7.618	2.843	0.008	-3.037	0.436	0.000
Firm_Size	0.010	0.036	0.794	0.066	0.268	0.807	-0.061	0.041	0.141
Firm_Age	22.455	22.789	0.325	567.417	168.038	0.001	1.237	25.749	0.962
CR	-0.010	0.043	0.814	0.928	0.315	0.004	0.117	0.048	0.016
MBV	0.005	0.013	0.715	1.959	0.097	0.000	0.055	0.015	0.000
NCFOTA	-4.641E-08	0.000	0.801	-8.516E-07	0.000	0.530	-1.616E-07	0.000	0.437
FAR	-0.113	0.063	0.074	0.453	0.463	0.328	0.034	0.071	0.629

Note: Coef= Coefficient; Std Err= Standard error; Sig= significant level.
*P < 0.05
**P < 0.01
***P < 0.001

Source: Data processed (2022)

The results of multiple linear regression testing using the significance level of 5% in Table 6 show that the variables of board expertise, namely Director Expertise and Executive Expertise based on academic degrees or business/finance professional degrees, did not affect Firm Performance (ROA, ROE, and Tobins'Q). This finding seems to support the argument of Tacheva & Huse (2006), who explained that a company's board background has no effect on company's financial accomplishment. There might be many other factors that increase the capacity of senior management members to improve firm performance, as stated by Gottesman & Morey (2006); for example, experience and skills in management driving them to advanced corporate strategies, solid social networks which elevates organization's place in industry, and skill-rich employees who enhance the caliber of company's product and service. In addition, these findings were also supported by research by Darmadi (2013), who stated that most large companies in Indonesia are family-controlled. A survey conducted by PWC in 2014 also found that 95% of companies in Indonesia are family-owned. Such a situation made the levels of educational background and certification of the companies' boards not the primary concern in all

business organizations. The sample used by this study used is Indonesian manufacturing companies since a survey conducted by PWC in 2014 revealed that 50% of family companies in Indonesia were in the manufacturing sector, and the remaining 45% were from other sectors. The discoveries imply that the academic education levels and certification degrees of boards had no significant effect on performance.

It was indicated that the significant effects of Return of Industry (Retind), Firm Age, Current Ratio, and MBV. Retind, Current Ratio, and MBV on Firm Performance (ROE and Tobins'Q) were present, but failed to prove their effect on return on assets (ROA). Firm Age only had considerable effects on Firm Performance (ROE) but failed to prove the similar impact on (ROA and Tobins'Q). Finally, the test results failed to find a significant effect on other control variables, namely Firm Size, NCFOTA, and FAR, on all Firm Performance proxies.

CONCLUSIONS

This research was to present empirical evidence regarding the impact of Board Expertise on Firm Performance using the samples of manufacturing companies registered in the Indonesia Stock Exchange from 2014 to 2018. Here Firm Performance measurement used three approaches, namely through the values of Return on Assets (ROA), Return On Equity (ROE), and Tobin's Q. Then Board Expertise, comprising Director Expertise and Executive Expertise was divided into two, namely based on academic degrees and business/finance professional titles. After the tests, it was found that the variables academic degrees and business/finance professional degrees owned by directors and executives failed to prove that there was any influence on Firm Performance from all proxies. Furthermore, it is known that the control variables Retind, Current Ratio, and MBV influenced Firm Performance (ROE and Tobins'Q) but failed to prove their influence on return on assets (ROA). Firm Age only had noteworthy impacts on firm performance (ROE) yet failed to prove consequential effects on (ROA and Tobins'Q). Finally, the test results failed to find a significant effect on other control variables, namely Firm Size, NCFOTA, and FAR, on all Firm Performance proxies. The expected implication of this study was that companies can consider Director Expertise in improving Firm Performance. Board members who have higher relevant proficiencies, experience, knowledge, and industry skills will be more optimal in producing more useful resolutions for solving problems and improving performance.

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