

# THE IMPACT OF DIRECTOR CHARACTERISTICS ON FIRM PRODUCTIVITY: THE CASE OF INDONESIAN LISTED-FIRMS

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***Abstract:** This paper investigates the impact of director characteristics on firm productivity in Indonesian-listed firms. Using a cross-section of 48 Indonesian-listed firms for 2014 to 2015 period, this study employs maximum likelihood estimates to analyse the data. Director characteristics are represented by age, education level and remuneration, and firm productivity is calculated using input and output ratio. The results reveal that director characteristics have no significant impact on firm productivity. The non significant result may be due to the fact that the majority of listed firms in Indonesia are owned by group or family, hence there are high possibility that the appointment of directors is based on the group or family ties though an awareness of good corporate governance conduct has been massively disseminated.*

***Key words:** Director Characteristics, Firm Productivity, Indonesia*

## 1. INTRODUCTION

In the era of globalisation, all firms have to strengthen their input including firm's management so the firm's objectives can be achieved. Management plays an important role in operating the daily activities. Further, firms would expect higher productivity from every aspect including management productivity and employees' productivity. At the corporate level, productivity measurement is primarily used as a management tool to analyze and promote the efficiency of production. Therefore, firm needs to determine the level of productivity which they operate, in order to compare it with the productivity standards that have been set by the management.

Measuring the level of productivity improvements over time is crucial, and comparing with the productivity of similar industries that produce similar products or services is also required. This is important so that the company can improve the competitiveness of products/services produced in a highly competitive global market. An income level, physical condition and production level are some of productivity measured in the company.

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There are some factors affected the firm's productivity, such as management productivity. An effective management can mobilize their employees to work effectively to achieve the organisational goals, and an effective management is generated from competence management resulting from different characteristics, skills, and knowledge.

Management productivity can be seen by the management experience, management level of education and management range of age. The education level of director may affect the firm by having an adequate education; it will help the management in managing the company. Education is a long-term process that uses systematic and organized procedures. Productivity (productivity means the ability to produce) together with the efficiency that is output divided by input. Only if efficiency is more technical connotation, whereas connotes economic productivity. Generally, productivity can be measured using a ratio between the results achieved (outputs) with the overall resources used (inputs). The concept of productivity is developed to measure the ability to generate added value on the input components are used. Simply put productivity is meant here is the arithmetical ratio between the amount produced and the amount of each resource that is used during the activity.

Increased productivity is one of the firm goals, and the productivity implies respect with economic concepts, philosophical, or business productivity with regard to human activities to produce goods or services that are useful for the fulfillment of human life and society in general. As a philosophical concept, productivity contains a view of life and mental attitude that is always trying to improve the quality of life to which the state should be better today than yesterday, and quality of life should be better tomorrow than today. It gives impetus to try and develop them. While the concept of the system, providing guidance thought that the achievement of a goal there must be cooperation or coherence of the relevant elements as a system.

The concept of productivity is closely connected with the efficiency and effectiveness (Gomes, 2000). Effectiveness and high efficiency will generate high productivity. And if the effectiveness and the efficiency is low, then it is assumed to have occurred mismanagement. If a higher efficacy but low efficiency is possible to avoid waste (high cost), while when the high efficiency but low effectiveness, means not achieved the target or the deviation from the target.

This study focuses generally on the director characteristics and firm productivity in Indonesia. Therefore, we attempt here to answer this question: **"How does director characteristics affect firm productivity?"** Age, experience and remuneration of director are employed as proxies to indicate the director characteristics. A ratio of net income over number of employees employed as proxies to indicate firm productivity, and it would be a good indicator of underlying firm productivity as it indicates how much incomes are generated by every employee.

## 2. LITERATURE REVIEW

Management is one of the drivers of company's success, and hence a high qualified of management is required to support and accelerate the firm's productivity. It is believed that unqualified management will destroy the company because they are the spearhead in managing the company (Jamieson, 1980). Competency is the capability of person in completing the tasks effectively, and it should be supported by an extensive knowledge (Cave and McKeown, 1993; Schuler, 2003). Competency is an indicator of human abilities (Marrelli, 1998), and it is related with personal characteristics (Boyatzis, 1982; Mirabile, 1997) and personal quality (Bonder, 2003). Moreover, an incentive scheme may motivate in the organization, and the form of remuneration is given to the management to motivate them to work effectively. Moreover, Robbins (1998) stated that the organization is formed by the group of people bringing their own knowledge, experiences, background and personal characteristics to achieve the organization goals.

Yeganegi (2000) investigated the impact of managers' competency on the organization effectiveness using Boyatzis and Lutanz's model, and the results revealed that there is a significant impact of managers' competency on the organization performance. Further, Mozaffari, Javadi and Naderian (2002) investigated the role of skills and competency in affecting the effectiveness of managers, and the results revealed that all skills and competency has a significant effect on the manager's effectiveness in managing the firm productivity.

Productivity can be affected by several factors such as income level, physical condition, age, level of education, individual relationships, technology and production, and from those factors, we can see that the factors of age, education level and income levels of directors may greatly affect the productivity of a company. The age factor in company's productivity has an important role in an organisation, in particular the age of the director. In addition to the educational level of a director affect the productivity of the company, as to capitalize the knowledge and adequate education the easier a company director in resolving a problem and his responsibility as a leader. Education is a long-term process that uses systematic and organized procedures in which the employee should learn the knowledge to achieve organisational goals. A director of the company will easily achieve good performance if it has both a high and adequate education and understand the goals and the wisdom of the organisation for the company's success.

An organization must develop human resources and must have good corporate governance for the purpose of the vision and mission of the organization. More and more employees within an organization reflect that the organization has managed good corporate governance. A company leader will easily achieve good performance if it has both higher education and adequate with at wages according to their education. Thus a leader will understand the wisdom of the target and the organization for the success of the organization, the success of the organization depends on the quality of human resources.

Remuneration is the reward given by the company to the workers/leadership as a result of the achievements that have been given in order to achieve the company's goals. This notion suggests that the presence in an enterprise organization can not be ignored. Therefore, it will be directly linked to the achievement of corporate goals and productivity of the company. The level of remuneration for each company is different. The difference is caused by several factors that influence them, namely the demand and supply of labor, capabilities, capabilities and skills of the workforce, the role of corporations, labor unions, and the size of the job risks, government intervention, and the cost of living. Judging from the purchase of the remuneration system can be distinguished on work performance, length of employment, seniority or length of services, needs, and premiums.

In conclusion, most previous studies conducted used a survey method using in-depth-interview and questionnaires, while this study using non survey method as the primary data is collected from the annual report of listed firms in the Indonesian Stock Exchange using a structural equation modeling (SEM).

### 3. DATA AND METHODOLOGY

This study uses data from the annual report of Indonesian-listed firms of property, real estate and building construction industry for the period of 2014-2015 collected from Indonesian Stock Exchange (IDX) archive. There are nine industrial categories in IDX; (1) Crops Industry, (2) Coal Mining Industry, (3) Basic Industry and Chemical Industry, (4) Machinery and Heavy Equipment Industry, (5) Consumer Goods Industry, (6) Property, Real Estate and Building Construction Industry, (7) Infrastructure, Utilities and Transportation Industry, (8) Finance Industry, (9) Trade, Services and Investment Industry. There are 54 firms from the Property, Real Estate and Building Construction Industry, and using *Isaac* dan *Michael* formulation in determining the sample used, therefore, a cross-section data of 48 listed firms are employed in this study from the period of 2014 to 2015.

The dependent variable is firm productivity which is measured as ratio of net income over number of employees. The independent variable is director characteristics which are represented by age, education level and remuneration of the director. Education level variable employed dummy variables, and remuneration is calculated by comparing current remuneration and previous year remuneration.

Maximum likelihood model is employed to estimate firm productivity. The regression model is specified as follows:

$$Firm\ Productivity_i = \beta_0 + Age_i + Education_i + Remuneration_i + \varepsilon_i \quad (6)$$

### 4. EMPIRICAL RESULTS

Table 1 provides descriptive statistics and Table 2 provides normality test. As can be seen in Table 1, The mean value of Productivity (Y) is -0,0067 with a range of -0,7462 to 1,6806, suggesting that the majority of the firms have low productivity in 2014 to

2015 period. The mean value of Age is 53,89 year with a range from 40-68, suggesting that most directors in their mature period in the sample. The mean value of education level is 0,9167 with a range of 0 to 1, suggesting that most directors have higher degree qualification level. The mean value of remuneration is 0,2279 with a range of -0,1406 to 1,0677, suggesting that in the period of 2014 and 2015, most remuneration given in 2014 are relatively lower thanthat of 2015.

**Table 1**  
**Descriptive Statistics**

	<i>Productivity</i>	<i>Age</i>	<i>Education</i>	<i>Remuneration</i>
Mean	-0,0067	53,8958	0,9167	0,2279
Standard Error	0,0542	0,9745	0,0403	0,0344
Median	-0,0218	55,0000	1,0000	0,1912
Minimum	-0,7462	40	0	-0,1406
Maximum	1,6806	68	1	1,0677
Count	48	48	48	48

**Table 2**  
**One-Sample Kolmogorov-Smirnov Test**

		<i>Age</i>	<i>Education</i>	<i>Remuneration</i>	<i>Productivity</i>
N		48	48	48	48
Normal Parameters <sup>a,b</sup>	Mean	53.90	.92	.2281	-.0069
	Std. Deviation	6.752	.279	.23875	.37551
Most Extreme Differences	Absolute	.093	.534	.176	.128
	Positive	.080	.383	.176	.128
	Negative	-.093	-.534	-.070	-.113
Kolmogorov-Smirnov Z		.647	3.699	1.220	.886
Asymp. Sig. (2-tailed)		.797	.000	.102	.412

a. Test distribution is Normal.

b. Calculated from data.

From Table 2, apart from all variables, it can be sen that only education has 0,000 significance value of Kolmogorov-Smirnov Z, suggesting that only education variable has no normal distribution.

Table 3 exhibits the regression weight for all variables using maximum likelihood estimation. The coefficient for age is a positive and non significant, suggesting that age has no significant impact on firm productivity. Though it has no significant impact, the positive sign of the coefficient indicates that mature directors tend to increase firm productivity as they have more experiences and networks compare to those younger directors. The coefficient for education is a negative and not significant, suggesting that education has no significant impact on firm productivity. Though it has no significant impact, the negative sign of the coefficient indicates that directors having higher degree qualification tend to increase firm productivity and vice versa. The coefficient for remuneration is a positive and not significant, suggesting that remuneration has no significant impact on firm productivity. Though it has no

significant impact, the positive sign of the coefficient indicates that higher remuneration will increase firm productivity and vice versa. The structural model can be seen in Figure 1.

**Table 3**  
**Maximum Likelihood Estimation Output**

<i>Regression Weight</i>			<i>Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>	<i>Label</i>
Y	<--	X2	-,166	,194	-,855	,392	
Y	<--	X1	,109	,971	,112	,911	
Y	<--	X3	,112	,227	,496	,620	
<i>Intercepts</i>			<i>Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>	<i>Label</i>
X1			1,728	,008	215,084	***	
X2			,917	,040	22,738	***	
X3			,228	,034	6,619	***	
Y			-,069	1,690	-,041	,968	
<i>Variances</i>			<i>Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>	<i>Label</i>
e1			,003	,001	4,848	***	
e2			,076	,016	4,848	***	
e3			,056	,011	4,848	***	
e4			,135	,028	4,848	***	

Table 4 provides model fit summary for the regression model. In accord with the model fit results, it can be seen that the structural equation model is fitted as AGFI value 0.923 is smaller than the cut off (0.90), the AIC Model (16.374) is smaller than the AIC Saturated (20.000), the ECVI Model (0.348) is smaller than the ECVI Saturated (0.426), the GFI (0.977) is higher than the cut off (0.90), and the RMSEA (0.000) is smaller than the cut off (0.08).

**Table 4**  
**Model Fit Summary**

<i>RMR, GFI</i>				
<i>Model</i>	<i>RMR</i>	<i>GFI</i>	<i>AGFI</i>	<i>PGFI</i>
Default model	,004	,977	,923	,293
Saturated model	,000	1,000		
Independence model	,006	,964	,939	,578
<i>Parsimony-Adjusted Measures</i>				
<i>Model</i>	<i>PRATIO</i>	<i>PNFI</i>	<i>PCFI</i>	
Default model	,500	,163		
Saturated model	,000	,000		
Independence model	1,000	,000		

RMSEA				
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,000	,000	,225	,548
Independence model	,000	,000	,136	,791

AIC				
Model	AIC	BCC	BIC	CAIC
Default model	16,374	18,041	29,472	36,472
Saturated model	20,000	22,381	38,712	48,712
Independence model	11,519	12,471	19,003	23,003

ECVI				
Model	ECVI	LO 90	HI 90	MECVI
Default model	,348	,362	,514	,384
Saturated model	,426	,426	,426	,476
Independence model	,245	,298	,408	,265

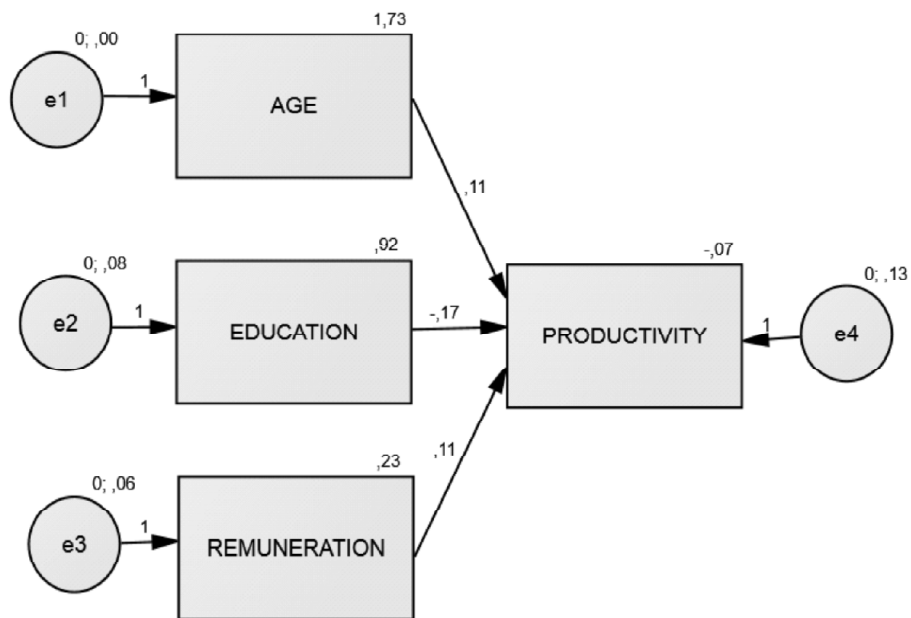


Figure 1: Director Characteristics on Firm Productivity

### 5. CONCLUSIONS

This paper is an attempt to empirically test for director characteristics and firm productivity in the Indonesian context in which this study examines a recent dataset of Indonesian listed-firms. Using a cross-section of 48 Indonesian-listed firms for

2014 to 2015 period, this study employs maximum likelihood estimates to analyse the data in particular a structural equation modeling (SEM). The result reveals that director characteristics have no significant impact on firm productivity. The non significant result may be due to the fact that the majority of listed firms in Indonesia are owned by group or family, hence there are high possibility that the appointment of directors is based on the group or family ties.

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