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AUDIT QUALITY OF BIG FOUR FIRMS: EVIDENCE FROM CLIENT'S BUSINESS STRATEGY

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ABSTRACT

This study aims to examine the association between audit quality and the client's business strategy using a comprehensive business strategy framework from Miles & Snow (1978; 2003), covering the business strategy of prospectors, defenders, and analyzers. We use the Big Four audit firms as our proxy for audit quality and using a composite score as a construct of a business strategy used by the firms. Using a two-stage logistic regression model in our tests and research samples from public listed companies of manufacturing industries in the Indonesia Stock Exchange (IDX), this study finds evidence that audit quality has a negative effect of the business strategy with prospector-type. This study implies that companies have different business strategies and auditors are more aware of the clients with the prospector-type strategy that increases audit risk and financial statements risk compared to the defender-type strategy. Our study contributes by finding a relation between the audit quality literature and the strategic management literature. Further study should consider broader measures of audit quality instead of the Big Four audit firms.

KEYWORDS: Analyzers; Audit Quality; Business Strategy; Defenders; Prospectors

INTRODUCTION

This study investigates the association between audit quality literature and business strategy in the strategic management literature. There are many literature studies on audit quality (for example, audit fees, audit tenure, and audit firm size or Big N) that discuss how audit quality affects earnings management, both accrual and real transaction earnings management, and financial reporting misstatements caused by management behavior (e.g., Becker *et al.*, 1998; Frankel, Johnson and Nelson, 2002; Ashbaugh, LaFond and Mayhew, 2003; Balsam, Krishnan, and Yang, 2003; Francis, 2004; Gul, Fung and Jaggi, 2009; Herusetya, 2009; Chi, Lisic and Pevzner, 2011; Church *et al.*, 2015; Singer and Zhang, 2018).

Very little research is concerned with the relation between audit quality and business strategy, while on the other hands the application of corporate business strategies themselves can lead to misstatement of financial statements (e.g., Bentley, Omer and Sharp, 2013; Bentley-Goode, Newton and Thompson, 2017), irregularities (Bentley *et al.*, 2013), receive going concern opinion and material weakness disclosure (Chen *et al.*, 2017), and involved in aggressive tax avoidance (Higgins, Omer, and Phillip, 2014; Martinez and Ferreira, 2019). Previous studies conclude that accounting research, in general, focuses more on identifying potential indicators or "red flags" rather than examining the direct causes of financial statement misstatements (Bentley *et al.*, 2013).

There are several typologies of business strategy in the management literature. These typologies explain how companies compete for their business lines (Higgins, Omer, and Phillips, 2014). One of the most well-known typologies of business strategy is Miles & Snow's business strategy framework (1978; 2003). Miles and Snow (1978; 2003) use a theoretical framework to identify business strategies undertaken by companies in addressing business competition. Miles and Snow (1978; 2003) identified three business strategies that could be categorized as prospectors, defenders, and analyzers. Miles & Snow (1978; 2003) document that prospector strategies focus more on innovation and change, tend to have broad product domains, and have more flexible organizational structures. Furthermore, prospector strategies can better adapt to risks and uncertainties. Prospectors allocate a large portion of the budget to the costs of research and development (R&D), and marketing to respond to changes and enter new markets (Chen *et al.*, 2017). Prospectors also have the characteristics of using a diverse operating system and a decentralized control system (Miles & Snow, 1978; 2003).

Conversely, companies with a defender strategy focus more on cost efficiency and certainty as to the basis of competition, focus more on a lean product domain and a stable organizational structure. The strategy of defenders prefers investments in technology, thereby increasing efficiency. Defenders also tend to have a centralized control system to increase production and efficient distribution (Chen *et al.*, 2017). At the level of strategy between prospectors and defenders is a strategy with typology analyzers that have characteristics between prospectors and defenders. The management literature agrees that these three forms of strategy can be observed and tend to have equal performance, and are present in all types of industries (Miles & Snow, 1997; 2003; Chen *et al.*, 2017).

International Standards on Auditing (ISA) 315 (IFAC, 2015) provides a summary of the procedures that auditors must follow to gain an adequate understanding of audit risk, and consider this risk in their audit planning (Hayes, Wallage, & Gortemaker, 2014; Arens, Elder, & Beasley, 2015), including in considering audit risk arising from client business risks using a strategy-oriented framework (Hayes *et al.*, 2014). Recent studies find general

support for this argument that auditors incorporate client business strategies in audit planning, and audit efforts vary according to the business strategies adopted by clients (Bentley *et al.*, 2013).

Extant studies find evidence that companies with the prospector-type business strategy were more likely to make irregularities (irregularities in financial reporting) even though audit efforts increased, and more likely to report a material weakness in internal control over financial reporting, and receive going concern opinion compared to companies that implemented a defender strategy (Bentley *et al.*, 2013; Bentley-Goode, Newton, and Thompson, 2017; Chen, Eshleman and Soileau, 2017).

Business risk can lead to the auditor's resignation and the litigation risk faced by the auditor and audit risk (Ghosh and Tang, 2015). It is assumed that prospector-type business strategy tends to have higher business risk compared to defender-type business strategy so that it can trigger the resignation of external auditors; conversely high audit quality tends to deal with clients who have lower business risk (Miles and Snow, 1978; 2003; Ghosh and Tang, 2015). For example, after the Enron case, the Big Four public accounting firms deal more with non-problem clients to avoid SOX laws. The movements of ex-Andersen clients to the Second Tier or non-Big Four public accounting firms (e.g., Landsman, Nelson and Rountree, 2009) increase auditor business risk to the Second Tier public accounting firms (Hogan and Martin, 2009; Ghosh and Tang, 2015). On contrary, previous studies also found that auditors with more conservative clients would charge lower audit fees, issue fewer going-concern opinions, and be less likely to resign from audit assignments (DeFond, Lim, and Zang, 2016). The question is whether it is true that auditors with high audit quality (i.e. the Big Four) will accept clients who have higher business risks with prospector-type business strategy rather than defender-type business strategy? Because other studies suggest that there is an organizational role of the audit firm that makes auditors difficult in client-acceptance decisions where auditors require an adjustment between professional and commercial logic actions (Gendron, 2002). Furthermore, Gendron et al. (2006, p. 169) argue that "that certain changes in the condition of work have made categories of accountants more susceptible to the logic of professionalism". The results of their observations support the argument that large international accounting firms such as the Big Four report lower commitment to auditor independence than do others in public accounting.

Our study is the first study in Indonesia that investigate directly the association between audit quality represented by audit firm size of the Big Four and the business strategy using Miles & Snow's business strategy framework (1978; 2003) (e.g., Chen et al., 2017; Bentley et al., 2013; 2017). As far as we know, there is only one study that examines the interaction between audit quality and client business risk (Yuan, Cheng, Ye, 2016). Using a sample of Chinese listed firms for the period 2000-2010, Yuan et al. (2016) found that the negative relation between specialized industry auditors and discretionary accruals was more pronounced when the client's business strategy deviates from industry normal strategy. This study is important to do to support the theory between professional and commercial logic actions underlying the client-acceptance decisions (Gendron, 2002; Gendron *et al.*, 2006), i.e., clients who implement corporate strategies that can lead to misstatement of financial statements and weak internal control as mentioned above.

Literature studies suggest that auditors are responsible for understanding client business and industry and assessing risks arising from business (IFAC, 2015; Arens *et al.*, 2015). The auditor must comply with audit standards to gain an adequate understanding of risks and

consider these risks in audit planning (Hayes *et al*., 2014; Arens *et al*., 2015). Auditors should consider risks arising from the client's business using a strategy-oriented framework (Hayes *et al*., 2014). Business risk is "the risk associated with client's survival and profitability..." (Ghosh and Tang, 2015, p. 530), is also "the risk that the audit client's economic conditions will deteriorate in the future" (Bentley *et al*., 2013 p.783).

Companies with business prospector strategies are more likely to spend research and development, and marketing costs to gain new markets, so they are likely to face uncertainty in performance, and related to risk-seeking and other risks that could potentially disrupt company going concern (Chen *et al*., 2017; Higgins *et al*., 2014; Bentley *et al*., 2013). Prospector strategies also tend to face higher operational risk and tend to be less efficient than defenders' strategies. The prospector strategy tends to be riskier than the defender's strategy (Chen *et al*., 2017). Therefore auditors are required to assess the inherent risk associated with prospector business strategies (Arens *et al*., 2015; IFAC, 2015). DeFond *et al*. (2016), for example, found evidence that auditors always manage client risk, and auditors who have more conservative clients tend to charge lower audit fees and tend to issue fewer going-concern opinions. Furthermore, auditors are more aware of the higher risk for clients with the prospector's strategy compared to the defender's strategy (Chen *et al*., 2017), and charge a higher fee for companies with a prospector-type strategy compared to the defender-type strategy due to a tendency towards misstatement (Bentley *et al*., 2013). We argue that although auditors are faced with difficult client-acceptance decisions because of the audit firm's organizational role in retaining clients, large audit firms such as the Big Four tend to maintain their reputation (reputation effect) rather than face the audit risk by keeping their clients (client dependence) (DeAngelo, 1981; Becker, C.L., Defond, M.L., Jiambalvo, J., and Subramanyam, K.R., 1998).

Thus, higher audit quality tends to minimize audit risk that could arise from the client's business strategy with prospector-type compared to the defender-type strategy (Chi *et al*., 2011; Arens *et al*., 2015; IFAC, 2015). Based on the reasons stated above, the hypothesis to be tested is as follows:

H1: *Audit quality has a negative effect on prospector-type business strategy*

METHOD

Sample Selection and Data Sources

Description	Number of observations
Listed firms in the manufacturing industry during 2010-2015	143
Less:	
Unavailable data for business strategy during 2007-2015	17
Financial statements with foreign currencies other than Rupiah	26
Newly listed companies in 2007-2015	5
Delisted companies during 2007 – 2015	1
The final sample for listed firms that meet our criteria during 2010-2015	94
Number of final observations during 2010-2015 in firm-years	282
*All data for the computation business strategy's score is computed using the three prior year data, e.g., for 2010's data, we need the data for 2009,	

Table 1. Sample Selection

The population of this study was taken from all companies listed on the Indonesia Stock Exchange (IDX) in the manufacturing industry with observations from 2010 to 2015, and with sample selection criteria based on purposive sampling as follows: (i) Have complete financial statements and annual report each year; (ii) Data for computing business strategy types are complete for 2010-2015, including the data needed for calculating the standard deviations for the previous three years, and other proxies; (iii) Auditor's reports for each firm are available; (iv) Financial statements are stated in the rupiah currency. Based on the above sample selection criteria, we got 282 firm-year final observations as our sample. Table 1 present the description of the sample selection.

Empirical Research Models

We do some stages in our hypothesis testing. To test the H1 hypothesis, the logistic regression model is used as follows:

$$STRATEGY_{it} = \delta_0 + \delta_1 BIG\_FOUR_{it} + \delta_2 ROA_{it} + \delta_3 CHG\_ROA_{it} + \delta_4 SIZE\_FIRM_{it} + \delta_5 LEVG_{it} + \delta_6 SGRW_{it} + \delta_7 AGE_{it} + \delta_8 LOSS_{it} + e_{it} \ldots\ldots\ldots\ldots \quad \text{(Eq.1)}$$

Where:

STRATEGY	=	A business strategy, given 1 if the firm deploys prospector-type business approach, 0 if otherwise. We follow Bentley et al. (2013) to compute the comprehensive score of business strategy.
BIG_FOUR	=	Dummy variable, 1 if the firm is audited by one of the Big Four audit firms, 0 otherwise
ROA	=	Return on assets
CHG_ROA	=	Changes in return on assets
SIZE_FIRM	=	Natural logarithm of assets
LEVG	=	The leverage ratio, defined as total liabilities divided by total assets
SGRW	=	Sales growth, i.e. (sales t - sales t-1)/sales t-1
LOSS	=	Dummy variable, 1 if the firm reported a loss in the current year, 0 otherwise
AGE	=	Natural logarithm of the number of years
i, t	=	Identification for firm i, year t
e	=	Residual errors

Following Bentley *et al.* (2013), the composite strategy score is between 6 and 30. We describe the operational variable of this STRATEGY variable in the next section. STRATEGY is a dummy variable (1; 0), given a number 1 if the STRATEGY score is between 24 and 30, i.e., the company applies a prospector-type strategy, 0 otherwise.

The BIG_FOUR variable is a dummy variable (1; 0), given several 1 if the audit firm affiliated with the Big Four, and 0 if others. The coefficient δ1 of the BIG_FOUR variable is predicted to be negative and significant to obtain evidence that the audit quality represented by the Big Four has a negative effect on the prospector-type business strategy.

In Model 1 (Eq. 1), several control variables also influence the business strategy (STRATEGY). Therefore we use control variables as follows: return on assets ratio (ROA), ROA change ratio (CHG_ROA), company's size (SIZE_FIRM), level of debt (LEVG), sales growth (SGRW), age of the company (AGE), and company report a loss (LOSS).

The business strategy also influences the BIG_FOUR variable in Eq. 1 due to the problem of the endogenous variable of audit quality. The organizational theory states that firms with prospector innovation strategies tend to have weaker internal controls than companies with defender-type strategies. Chen *et al.* (2017) find consistent evidence about this. Material weaknesses in financial reporting are positively related to earnings management (Chan, Farrell, and Lee, 2008). The most common specific material weaknesses occur in "the current accrual accounts, such as the accounts receivable and inventory accounts" (Ge and Mcvay, 2005). Moreover, clients who have problems and higher business risks are avoided by Big Four auditors (DeFond *et al.*, 2016). Based on the above reasons, we use the logistic regression model with a two-stage model to test the H1 hypothesis.

In the first step, we use the first stage logistic regression model as follows:

$$BIG\_FOUR_{it} = \beta_0 + \beta_1\ DACCRL_{it} + \beta_2\ AUDIT\_COM_{it} + \beta_3\ ROA_{it} + \beta_4\ CHG\_ROA_{it} + \beta_5\ SIZE\_FIRM_{it} + \beta_6\ LEVG_{it} + \beta_7\ SGRW_{it} + \beta_8\ AGE_{it} + \beta_9\ LOSS_{it} + e_{it} \quad \text{(Eq. 2)}$$

Where:

DACCRL = Absolute discretionary accruals using Kothari et al. (2005) accrual model

AUDIT_COM = Dummy variable of the audit committee, if the audit committee has financial and accounting competency, 0 if otherwise

In the empirical Model 2 (Eq. 2) there are several instrument variables used, i.e., absolute discretionary accruals (DACCRL), and competencies of the audit committee in finance or accounting (AUDIT_COM). In contrast, ROA, CHG_ROA, SIZE_FIRM, LEVG, SGRW, AGE, LOSS are used as control variables as in our main model (Eq. 1). Following Kothari *et al.* (2005), we use earnings management variables (DACCRL) to obtain the absolute discretionary accrual value (DACCRL) as follows in Eq. 3:

$$TACC_{it}/A_{it-1} = \alpha_0 + \alpha_i\ [1/\ A_{it-1}] + \beta_{1i}\ [(\Delta REV_{it} - \Delta\ AR_{it})/\ A_{it-1}] + \beta_{2i}\ [PPE_{it}/A_{it-1}] + \delta_1 ROA_{i,\,t-1} + \varepsilon_{it} \quad \text{(Eq. 3)}$$

Where:

TACC = Total accruals, i.e., total operating income minus cash flow from operations

A	=	Total assets
REV	=	Sales
AR	=	Account receivables
PPE	=	The property, Plant, and Equipment in the gross amount
ROA	=	Return on assets

The next step is to test the 2nd stage logistic regression using the main model (Eq. 1), i.e., using the BIG_FOUR predicted value (PREDBIG_FOUR) which was obtained from the 1st stage logistic regression, where the predicted value of BIG_FOUR as an endogenous variable is negative and significant.

Measurement of Business Strategy (STRATEGY)

We use a comprehensive measure of business strategy based on Miles and Snow's theoretical framework (1978; 2003). Following Bentley *et al.* (2013), we use six composite measures to construct STRATEGY as follows:

1. Research and Development (R&D) ratio to sales, calculated based on the average of the previous three years from t-1 to t-3
2. Employee to sales ratio, calculated based on the average of the previous three years from t-1 to t-3
3. Growth rate (percentage change in sales in one year), calculated based on the average of the previous three years from t-1 to t-3
4. Marketing ratio (SG&A) to sales, calculated based on the average of the previous three years from t-1 to t-3
5. Employee fluctuations (Standard deviation of total employees), calculated based on the average standard deviation of the previous three years from t-1 to t-3
6. Capital intensity (net PPE scaled by total assets), calculated based on the average of the previous three years from t-1 to t-3

We calculate the value of each proxy for each company in each year and rank it in each sub-industry based on quintile. The value in the highest quintile is given a score of 5, and then the next quintile is given a score of 4, etc. The maximum value for a business strategy score is 30. The company's strategy uses strategies with the typology of prospectors if the total score is between 24-30, defenders if the total score is 6-12, and analyzers if the score is 13-23 (Bentley *et al.*, 2013). STRATEGY is a dummy variable (1; 0), given 1 if the STRATEGY score is between 24 and 30, indicating that the company applies the prospector-type strategy, and 0 otherwise.

RESULTS AND DISCUSSION

Descriptive Statistics and Correlations

Based on descriptive statistics in Table 2, the mean of the STRATEGY variable is 0.085, indicating that the proportion of firm-year observations using the prospector-type

strategies are 8.5 percent or around 24 firm-year observations; the rest observations are defenders and analyzers.

Variable	Minimum	Mean	Median	Maximum	Standard Deviation
STRATEGY	0.000	0.085	0.000	1.000	0.280
BIG_FOUR	0.000	0.372	0.000	1.000	0.484
ROA	-0.400	0.084	0.049	1.619	0.174
CHG_ROA	-11.202	-1.007	-0.152	21.055	9.643
SIZE_FIRM	10.502	14.300	14.102	19.319	1.644
LEVG	0.050	0.526	0.492	3.029	0.403
SGRW	-1.000	0.119	0.072	5.947	0.606
AGE	1.000	19.291	21.000	34.000	7.085
LOSS	0.000	0.234	0.000	1.000	0.424

Variable definition: STRATEGY = Business strategy, given 1 if the firm uses prospector-type business strategy, and 0 otherwise; BIG_FOUR = 1, if audited by the Big Four audit firm, and 0 otherwise; ROA = ratio of net operating income for year t to total assets at the end of the year; CHG_ROA = Percentage of change in ROA from year t compared to year t-1; SIZE_FIRM = firm's size measured by the natural logarithm of total assets; LEVG = Leverage, is the ratio of debt to total assets; SGRW = growth rate of company sales, (sales t-sales t-1) / sales t-1; AGE = the firm's age since listed in the IDX; LOSS = 1, if the firm reports a loss in the current year, and 0 otherwise.

Table 2. Descriptive Statistics

The BIG_FOUR variable is the main variable in Equation 1, which has a proportion of 0.372, indicating that on average, the research sample audited by the Big Four audit firms is 37.23 percent, and the rest observations are audited by non-Big Four. Our descriptive statistical results also explain that, in general, the data have relatively small standard deviations. This shows that our observational data are homogeneous, except for the changes in return on assets (CHG_ROA) and the company age (AGE). We use the test of proportion difference of the STRATEGY (not tabulated) and found statistically significant differences between companies that apply the prospector-type strategies and the other strategies (z-test = -13.93, significant at the 0.01 level).

The correlation results between all variables in Model 1 or Equation 1 (Eq. 1) can be seen in Table 3. Based on Table 3, the BIG_FOUR does not have any correlation with the STRATEGY. The coefficient ϱ is -0.025, but it is not significant at the 10 percent level. Some control variables have a significant correlation (i.e., ROA and LOSS), and some do not have a significant correlation to the STRATEGY variable.

Hypothesis Testing Results

The results H1 hypothesis test can be seen in Table 4 (Panel A). Before conducting a two-stage logistic regression test, we use ordinary logistic regression with the first Equation (Eq. 1). The test results have a low Pseudo R^2, which is equal to 0.07 with p-value> Chi^2 0.05

and Wald Chi^2 15.68. The coefficient of BIG_FOUR (δ_1) is 0.601, with a z-value of 0.86, not significant at the level of 0.10. The results of this test provide an initial indication that

Variables	STRA	BIG_FOUR	ROA	CHG_ROA	SIZE_	LEVG	SGRW	AGE	LOSS
BIG_FOUR	-0.02	1.00							
	0.68								
ROA	-0.12**	0.36***	1.00						
	0.05	0.00							
CHG_ROA	0.01	0.04	0.09	1.00					
	0.92	0.53	0.14						
SIZE_FIRM	-0.05	0.55***	0.15***	-0.01	1.00				
	0.37	0.00	0.01	0.84					
LEVG	0.00	-0.18***	-0.28***	-0.03	-0.08	1.00			
	0.59	0.00	0.00	0.56	0.16				
SGRW	3.00	0.02	0.02	0.02	0.05	0.01	1.00		
	0.39	0.73	0.78	0.75	0.43	0.92			
AGE	-0.05	0.23***	0.27***	0.03	0.17***	-0.09	-0.05	1.00	
	0.22	0.00	0.00	0.59	0.01	0.11	0.41		
LOSS	0.04	-0.23***	-0.34***	-0.16***	-0.12**	0.36***	-0.03	-0.22***	1.00
	0.49	0.00	0.00	0.01	0.04	0.00	0.59	0.00	

, * indicates pairwise-correlation with a significant level at 0.05 and 0.01.

Variable definition: STRATEGY = Business strategy, given 1 if the firm uses prospector-type business strategy, and 0 otherwise; BIG_FOUR = 1, if audited by the Big Four audit firm, and 0 otherwise; ROA = ratio of net operating income for year t to total assets at the end of the year; CHG_ROA = Percentage of change in ROA from year t compared to year t-1; SIZE_FIRM = firm's size measured by the natural logarithm of total assets; LEVG = Leverage, is the ratio of debt to total assets; SGRW = growth rate of company sales, (sales t-sales t-1) / sales t-1; AGE = the firm's age since listed in the IDX; LOSS = 1, if the firm reports a loss in the current year, and 0 otherwise.

Table 3. Variable Correlations

the BIG_FOUR variable does not influence the STRATEGY; thus, it is suspected that BIG_FOUR is influenced by the company's strategy and has endogenous issues.

The test results of the H1 hypothesis using the two-stage logistic regression model are shown in Table 4 (Panel B & C). The BIG_FOUR variable as the dependent variable is predicted using Equation 2. The results of the first stage logistic regression model (Panel B) have a p-value> Chi^2 of 0.00, significant at the 0.01 level, with a Pseudo R^2 of 0.39 indicating the ability of all independent variables in Equation 2 to explain the BIG_FOUR variable is 39 percent. The results of the first stage of the logistic regression model found evidence that the accrual earnings management (DACCRL) had a negative effect on the BIG_FOUR variable with a significance level of 5 percent (coefficient β_1 = -0.798, z-stat = -2.01). This indicates that public accounting firms affiliated with the Big Four firms are more likely to deal with clients with lower accrual earnings management behavior. The results are consistent with the previous studies that found that high audit quality through

the size of the audit firm, i.e., the Big Four firms have lower accruals earnings management (Becker *et al.*, 1998). The SIZE_FIRM coefficient (z-stat = 7.75) and LEVG (z-stat = -1.73), respectively significant at the 0.01 and 0.05 levels. Companies with a larger size (SIZE_FIRM) and lower level of debt (LEVG) are more likely to use a larger size of public accounting firms, in this case, the Big Four.

Independent Variables	Analysis using Logistic Regression			Analysis using Two-Stage Logistic Regression					
	Panel A			Panel B			Panel C		
	Dependent Variable: STRATEGY			First Stage: (Dep. Variable: BIG_FOUR)			Second Stage: (Dep. Variable: STRATEGY)		
	Coeff.	z-stat	p-value	Coeff.	z-stat	p-value	Coeff.	z-stat	p-value
Constant	0.430	0.19	0.85	0.978***	-6.79	0.00	-0.043***	-3.69	0.00
BIG_FOUR	0.601	0.86	0.39						
PREDBIG_F							-0.994***	-3.54	0.00
DACCRL				-0.798**	-2.01	0.05			
CG				0.066	1.25	0.21			
ROA	-0.252***	-2.66	0.01	0.468	1.21	0.22	0.655	-0.59	0.56
CHG_ROA	0.006	0.27	0.79	0.003	0.27	0.79	0.013	0.65	0.51
SIZE_FIRM	-0.107	-0.66	0.51	0.006***	7.75	0.00	0.155***	3.59	0.00
LEVG	-1.273**	-1.94	0.05	0.59*	-1.73	0.08	-0.716***	-3.10	0.00
SGRW	-0.343	-1.34	0.18	0.133	0.46	0.65	-0.618	-1.34	0.18
AGE	-0.023	-0.74	0.46	0.031	1.20	0.23	0.017	0.47	0.63
LOSS	-0.254	-0.41	0.68	-0.513	-0.98	0.33	-0.778	-1.43	0.15
p-value	0.05			0.00			0.00		
Pseudo R2	0.07			0.39			0.14		
N	282			282			282		

*, **, *** show significance level at 0.10, 0.05, 0.01, respectively with a two-tailed tests.

Variable definition: STRATEGY = Business strategy, given 1 if the firm uses prospector-type business strategy, and 0 otherwise; BIG_FOUR = 1, if audited by the Big Four audit firm, and 0 otherwise; PREDBIG_FOUR4 = BIG_FOUR predicted value using two-stage logistic regression; DACCRL = Absolute discretionary accrual using the accrual model from Kothari, Leone, and Wasley (2005); ROA = ratio of net operating income for year t to total assets at the end of the year; CHG_ROA = Percentage of change in ROA from year t compared to year t-1; SIZE_FIRM = firm's size measured by the natural logarithm of total assets; LEVG = Leverage, is the ratio of debt to total assets; SGRW = growth rate of company sales, (sales t-sales t-1) / sales t-1; AGE = the firm's age since listed in the IDX; LOSS = 1, if the firm reports a loss in the current year, and 0 otherwise.

Table 4. Hypothesis Results

Based on the results of the first stage logistic regression model for the BIG_FOUR variable, we make a prediction model for the PREDBIG_FOUR variable in the second

stage of the logistic regression in Equation 1. The test results in the second stage regression model can be seen in Table 4 (Panel C). The regression model of the second stage logistics has a p-value> Chi^2 of 0.00, significant at the 0.01 level, and has a Pseudo R^2 of 0.14 or 13.69 percent.

In this second phase of testing, the PREDBIG_FOUR coefficient has a -0.994 with a z-test value of -3.65, significant at the 0.01 level. These test results find evidence that the PREDBIG_FOUR variable has a very strong negative effect on the STRATEGY variable. This finding implies that audit quality, as represented by the Big Four audit firms, has a negative effect on the prospector-type business strategy. Thus our H1 hypothesis can be supported. Audit quality influences not only the prospector-type business strategies, but the Big Four firms are also influenced by the company's prospector-type business strategy, which is also under the supervision of related corporate governance mechanisms.

Our findings in the scope of Indonesia as an emerging country are consistent with the results of a prior study suggesting that prospector-type business strategies are more likely to have a positive association with going concern opinion, material weaknesses in the financial statements, and more likely to make irregularities than defender-type business strategy (e.g., Chen *et al*., 2017; Bentley-Goode, *et al*., 2017, Bentley *et al*., 2013). The result of this study supports the argument that Big Four audit firms tend to maintain their reputation in their client-acceptance decision rather than accepting clients with prospector-type business strategy with higher audit risk compared to the clients with defender-type business strategy. Our findings also support the findings of Yuan *et al.* (2016) suggesting that there is an interaction between audit quality and business strategy using strategic deviance.

Some control variables in the second stage of the logistic regression model have a significant effect, and some do not have a significant effect on the STRATEGY. The test results found evidence that supports the prospector-type strategy, where companies with a larger size (SIZE_FIRM) and have a lower level of debt (LEVG) will tend to have a positive association with prospector-type strategies, compared with smaller firm sizes and higher debt.

CONCLUSION

Our study investigates the association between audit quality represented by the Big Four firm and business strategy. We use a business strategy framework of Miles & Snow (1978; 2003) and follow Bentley *et al.* (2013) to construct a comprehensive business strategy score. We used a sample of 282 firm-years observations from 2010 to 2015 and used a two-stage logistic regression model in our analysis. Our study found strong evidence that audit quality proxy using Big Four audit firm has a negative association with the prospector-type business strategy. This finding strengthens the prior research which found that prospector-type business strategies are determinants of audit quality measures in the independence dimension, e.g., going concern opinion compared to defender-type business strategy (Francis, 2004; Bentley *et al*., 2013; Chen *et al*., 2017). These findings also support the prior findings that there is an interaction between audit quality and business strategy using strategic deviance (Yuan *et al*., 2016).

This study implies that companies have different business strategies that could increase audit risk and financial statement risks, and auditors with high audit quality i.e., the Big Four audit firms use a higher level of skepticism to consider business strategy types, especially with the prospector-type strategy than the defender-type strategy. Our study contributes by finding a relation between the audit quality literature and the strategic management literature. This study also supports our argument that although auditors face

difficult decisions in the client-acceptance decision, the auditor with high audit quality i.e., the Big Four will maintain its reputation rather than accepting clients with high business risk, weak internal control, and has a tendency to do irregularities.

There are limitations in this study, and therefore conclusions drawn need to be considered with caution given that audit quality is only determined by the size of public accounting firms (i.e., Big Four). Audit quality can have other dimensions, such as auditors with industry specialization, the level of audit efforts, economic dependence to its clients, and the acceptance of going concern opinion. Our study has other limitations where the proportion of prospector-type business strategy is fewer than other types of business strategies, i.e., defenders and analyzers. We propose further study using broader measures of audit quality. Further studies also need to consider more observations for prospector strategies' typology compared to the other business strategies.

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