The Interaction Effect Among Top Management Teams Diversity: Evidence from the Indonesian Banking Sector

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Abstrak

Penelitian pada topik tim manajemen puncak (TMT) telah menjadi perhatian para akademisi dalam beberapa decade terakhir. Para peneliti berupaya menginvestigasi dampak dari komposisi TMT terhadap kinerja perusahaan dengan baik melalui hubungan langsung maupun tidak langsung. Komposisi TMT memanifestasikan ciri personal anggota tim yang biasanya direfleksikan dari keberagaman tim. Hanya saja, berbagai penelitian terdahulu gagal menghasilkan kesimpulan yang konsisten terkait permasalahan tersebut. Penelitian ini mengusulkan pendekatan alternatif dengan menguji efek interaksi antar variable keberagaman tim. Upaya ini didasarkan kepada asumsi bahwa karakteristik personal pada dasarnya berinteraksi antara satu dengan yang lainnya sebelum tercermin pada perilaku. Penelitian ini menggunakan tiga bentuk keberagaman yaitu keberagaman sebagai separasi, sebagai variasi, dan sebagai disparitas. Data dikumpulkan dari laporan tahunan perusahaan pada industry perbankan yang terdaftar di pasa sekunder dari tahun 2011 sampai 2017. Hasil pengujian memperlihatkan bahwa keberagaman tenure dan usia berdampak langsung terhadap kinerja perusahaan, dan efek interaksi secara nyata muncul antar keberagaman latar belakang fungsional, tenure dan usia terhadap kinerja perusahaan.

BACKGROUND

The role of top management teams (TMT) has been investigated for the last few decades. Substantial numbers of studies have explored the impact of TMT diversity on team process and organizational outcomes (Bantel & Jackson, 1989; Cao, Simsek, & Zhang, 2010; Hambrick & Chen, 1996; Johan & Herri, 2013; Johan & Wibowo, 2012; Knight et al., 1999; Simons, Pelled, & Smith, 1999). Despite extensive research, previous studies failed to generate a conclusive result. Many scholars found positive effects of TMT diversity because it broadens rationality in decision making, but others found the detrimental impact since variety could trigger internal conflict.

Other approaches by investigating mediator and moderator have been conducted to clarify the effect (e.g., Daspit, Ramachandran, & D' Souza, 2014; Heavey & Simsek, 2017; Knight et al., 1999; Simons et al., 1999). Several concepts such as social integration(Smith et al., 1994), decision comprehensiveness (Miller, Burke, & Glick, 1998), knowledge integration (Johan & Herri, 2013), debate (Simons et al., 1999), environmental uncertainty (Prasad & Junni, 2017), and CEO dominance (Haleblian & Finkelstein, 1993) were included into equations. The attempt generated a pattern that TMT diversity could deliver favorable outcomes on the decision process, while it affected team social behavior negatively.

However, two crucial problems are found in previous studies. First, those were failed to address the nature of diversity as a construct. Scholars often combined different kinds of diversity regardless of each unique conceptualizations (e.g., Knight et al., 1999; Simons et al., 1999; Smith et al., 1994). Harrison & Klein (2007) categorized diversity into three distinct definitions; diversity as separation, variety, and disparity. Each has a distinctive essence, operationalization, and impact (Harrison & Klein, 2007). Harrison and Klien (2007) stressed that it is crucial to treat each diversity according to each specific concept carefully. Combining different kinds of diversity could lead to misleading interpretations. It also vague logical connection or theoretical mechanism between particular TMTs diversity on team process or organizational outcomes. Moreover, previous researches were inconsistent due to merging different operationalization without a sound theoretical foundation.

Second, since the diversities of TMTs are based on demographic and psychographic traits, scholars neglected the possibility of the interaction effect among attributes. Upper echelon theory suggested that leaders use their combining values, experiences, and knowledge to establish strategic judgment (Hambrick & Mason, 1984). It implied that interaction among individual characteristics should be accounted for in comprehending the effect of leaders' traits since they are not merely relying on one particular trait.

This study aimed to explore the interactional effect among TMT diversities on the firm's performance. Diversity is classified based on each distinct conceptualization proposed by Harrison and Klein (2007). The model encompasses all the categories of diversity and examines the interactional effect among each category. Several most frequently used variables in previous studies were integrated into the framework. Four different variables are considered; diversity as separation is reflected from cognitive diversity, diversity as variety indicated from functional background diversity, and diversity as disparity measured from age and tenure diversity. The model was examined in Indonesia's banking sector because of the complicated situation facing this industry. The banking sector is under significant competitive pressure and is also obligated to follow strict government regulations and uphold prudential principles. Furthermore, Hambrick & Chen (1996) argued that the TMTs effect is paramount in a complex and dynamic environment.

LITERATUR REVIEW

TMT diversity could be understood as to what extent the TMT members have diverse characteristics (Finkeilstein, Hambrick, & Cannella, 2009). The characteristics could contain demographic and psychological traits such as background, functional experiences, value, cognitive styles. Harrison & Klein (2007) argued that diversity as separation is related to the differences among members within a single horizontal continuum such as goals, purposes, and orientation. Diverse teams reflect different positions among members. Diversity as a variety portrayed categorical differences among members such as sex, functional background, and expertise. Diversity is disparity concerned with diverse positions among members within a single vertical continuum such as age, tenure, and pay, representing a stratified level among members.

Miller et al. (1998) believed that the perception of what companies should achieve or pursue reflects individual cognitive style. This study followed such definition of cognitive diversity as different positions among members on organizations' goals and purposes (Miller et al., 1998). Since each member is different within a single continuum, cognitive diversity can be categorized as separation. It implied that each member has a unique position according to the goals or purposes of the company. Cognitive diversity could be manifested from executive education levels. Higher-level indicated more complex cognitive structures and high innovativeness (Chattopadhyay, Glick, Miller, & Huber, 1999; Finkeilstein et al., 2009). Therefore, this study used education level diversity as a proxy for cognitive diversity.

Functional background reflected personal knowledge, expertise, and experiences (Harrison & Klein, 2007). This diversity was regarded to deliver positive impacts due to plenty of information and perspective brought by each member in decision-making processes. Functional background diversity was categorized as a variety since each functional could be grouped mutually exclusive (Harrison & Klein, 2007). Each executive functional background was identified from the previous or dominant individual experiences (Bantel & Jackson, 1989; Bunderson & Sutcliffe, 2002), and functional background diversity was measured using Blau's index (Harrison & Klein, 2007).

Tenure reflects executive time serving within a group, position, or organization (Finkeilstein et al., 2009). Since several foci have occurred within tenure conceptualization, this study defined tenure as time serving in years of each individual as TMT. Harrison and Klein (2007) believed that tenure diversity pictured the disparities of power among members. Long tenure executives might hold more significant power sources such as experiences, know-how, knowledge of organizational culture, and employee trust. Similarly, age diversity is also believed as a disparity since it reflected the individual level of experiences and wisdom (Tanikawa & Jung, 2016). Both tenures and age are using as the

variables for diversity as a disparity in this study.

Hypothesis

Cognitive diversity could impose adverse effects because each person will hold individual beliefs. People with a strong cognitive base tend to be defensive to opposite views (Miller et al., 1998). Leaders who diverse in goals will find it difficult to reach consensus and potentially distracts constructive decision-making (Chattopadhyay et al., 1999; Johan & Wibowo, 2012). On the other hand, diversity as variety, reflected from functional background diversity, indicates team diversity in knowledge, expertise, and experiences. It could expand information sources and perspectives in decision making (Boone & Hendriks, 2009; Bunderson & Sutcliffe, 2002; Dahlin, Weingart, & Hinds, 2005; Lankau et al., 2007).

The interaction of high diversity as a variety with low diversity as separation may benefit firm performance. It allows TMTs to engage in constructive debate and consider alternatives under the same purposes or assumptions. High diversity in the functional background increases the team's information sources, broaden their rationality, hence could propose more alternatives. Such favorable conditions can be useful if each member has the same objectives. Therefore, a high level of diversity in variety might lower the detrimental effect of separation because of interdependency from each executives' diverse knowledge and expertise.

> *Hypothesis 1: Interaction between functional background diversity and cognitive diversity influences firm performance, whereas high performance occurs when functional diversity is high and cognitive diversity is low, vis versa.*

The disparity among team members creates social class (Harrison & Klein, 2007). Diverse tenure and age might lead to social conflict since the higher class party might feel superior while the lower might undervalue (Hsieh, Chung, & Lo, 2010; Li & Li, 2009). It might also complicate teams due to generation problems. The existence of high cognitive diversity will aggravate this problem. While potential social conflict occurred, each member also holds their view based on individual cognitive base. Therefore, high tenure diversity and high cognitive diversity will deliver a negative impact on organizational performance.

> *Hypothesis 2a: Interaction between cognitive diversity and tenure diversity influences firm performance, whereas the high performance occurs when cognitive diversity and tenure diversity are low, vis versa.*

> *Hypothesis 2b: Interaction between cognitive diversity and age diversity influences firm performance, whereas the high performance occurs when cognitive diversity and age diversity are low, vis versa.*

Interdependency occurs within a team with diverse knowledge and expertise. The condition encourages each member to interact intensively, hence reduce the probability of social conflict.

Scholars found that the frequency of interaction improved perception of well-being (Biggio & Cortese, 2013), thus increase the ability to respect each other. Personal conflict, which was evoked by disparity, could be transformed into constructive conflicts concerning job-related issues because each member relies on others' sources of information. The constructive conflict was found to increase the TMTs dynamic decision process, which leads to a better decision (Li & Li, 2009). Interaction among members triggered by interdependency will also increase team social integration (Camelo-Ordaz, García-Cruz, & Sousa-Ginel, 2014) and simultaneously reduced the detrimental effect of disparity among members.

> *Hypothesis 3a: Interaction between functional background diversity and tenure diversity influences firm performance, whereas high performance occurs when functional background diversity is high and tenure diversity is low, vis versa.*

> *Hypothesis 3a: Interaction between functional background diversity and age diversity influences firm performance, whereas high performance occurs when functional background diversity is high and age diversity is low, vis versa.*

METHOD

Sample and data collection

Data were obtained from the annual report of banking companies in Indonesia from 2011 to 2017 listed on the Indonesian Stock Exchange (BEI). Few purposive criteria were implemented to filter the companies. First, the companies must be listed at the end of the observation period. The go-private or delisting companies were excluded from the sample list. Companies that were announcing IPO during the period were included as samples. Next, only companies with complete information in annual reports for each year were included for further analysis. Forty companies passed from sample criteria with 242 annual reports, and then the information was scrutinized to gather necessary data. There are several missing data for a few executive characteristics, such as educational background and age. Several reliable sources, such as companies' websites, business magazines, and newspapers, were used to complete the information.

Measurement and analysis

The organizational performance was indicated from the return on equity (ROE). The indicator reflects the capital utilization and ability of TMT to generate profit for investors. Cognitive diversity was defined as the extent to which TMT members have diverse educational levels (Chattopadhyay et al., 1999). The procedure implemented by Chattopadhyay et al. (1999) by identifying the formal education level of each executive to indicated executive cognitive was followed. Chattopadhyay et al. (1999)

argued that an executive with longer formal education has a more conceptual cognitive style, while shorter formal education indicated less conceptual thinking. A standard deviation among groups indicated diversity within groups (Harrison & Klein, 2007). A high standard deviation implies a higher level of cognitive diversity (Miller et al., 1998).

The functional background was identified from the last functional area hold by an executive. Blau's index was used to measure group diversity (Harrison & Klein, 2007). A high score of Blau's index indicates a higher level of diversity. Individual tenure was captured from years serving each executives' position or tenure on the team (Tanikawa & Jung, 2016). Executive age was identified from ages reported in the annual report (Tanikawa & Jung, 2016). Group diversity for both variables was calculated using the coefficient of variation (Harrison & Klein, 2007).

Data were analyzed using a statistical approach of descriptive analysis, correlation analysis, multiple regression, and moderating regression by following the procedure proposed by Baron and Kenny (1986). They explained that if both dependent and independent variables are continuous, the moderator is a product of those variables. However, before conducting further analysis, the data's assumptions were checked to ensure the best linear unbiased estimation of the basic multiple regression model. Data examination to identify missing and outlier data was conducted in the first step of the analysis.

RESULT

Data were obtained from annual reports of 40 banks listed on the Indonesian Stock Exchange in five consecutive years. Table 1 describes the averages and correlation matrix among variables. Results indicated the relationship between tenure diversity and cognitive diversity. Correlation also occurred between cognitive diversity and functional background diversity. In table 2 is explained the determination effect of the model. The overall model is only accounted for 2 percent of firm performance. Although the score is low, the study's primary aim is not to establish a model but to inquire about TMT diversity's interactional effect.

Table 1. Descriptive Statistic and Pearson Correlation Matrix

No	Variables	N	Mean	St. Dev	1	2	3	4	5
1	ROE	242	7.91	19.33	1				
2	Cognitive diversity	242	.74	.36	-.039	1			
3	Functional diversity	242	.71	.16	.005	.871**	1		
4	Tenure diversity	242	1.07	.56	.137*	-.142*	-.099*	1	
5	Age diversity	242	.65	.27	-.172*	.020	.070	-.038*	1

*$p < .05$; **$p < .01$*

The result indicates a positive correlation between tenure diversity and firm performance. However, a negative relationship appeared between age diversity and firm ROE. The problematic result occurs in the relationship between cognitive and functional background diversity. The two variables appeared strong connection while both are predictors for firm performance. Such results might obscure the analysis due to the multicollinearity problem. Those variables will be analyzed in both the full and separate direct effect models to generate unbiased interpretation. Analysis in full direct model (Table 2) shows that tenure diversity has positive association with firm performance ($t = 1.93$, $p < .05$) while negative association occurred in the relationship between age diversity and performance ($t = -2.77$, $p < .01$). Both variables were classified as disparity, which was predicted to harm firm performance. The result corroborates the prediction for age diversity while contradicts tenure diversity.

Table 2. Regression and hypothesis testing

No	Variables	ROE Direct Model		ROE Interaction Model	
		β	t	β	t
1	Constant	-231.024		512.087	
2	Cognitive diversity	-.181	-1.39		
3	Functional diversity	.187	1.44		
4	Tenure diversity	.123	1.93*		
5	Age diversity	-.177	-2.77**		
6	Cognitive diversity x functional diversity			-.053	-.530
7	Cognitive diversity x tenure diversity			.132	-.039
8	Cognitive diversity x age diversity			.092	.874
9	Functional diversity x tenure diversity			.140	2.20*
10	Functional diversity x age diversity			-.175	-2.46*
	R^2	.039		.027	

*$p < .05$; **$p<.01$*

Cognitive diversity that was classified as separation does not affect firm performance. The result does not support the traditional belief that a diverse executive cognitive position will produce an unfavorable outcome (Miller et al., 1998). The relationship between functional background diversity and performance also indicated no direct relationship. The result also contradicts the prediction that functional diversity will deliver positive outcomes toward firm performance.

Interaction between functional background diversity and cognitive diversity is not affected firm performance ($t = -.530$, $p > .10$). Previous studies suggested that both variables are separately having opposite effects on team processes. Variety could deliver positive impacts, while separation could tamper organizations. The hypothesis predicted that separation and variety would benefit firm

performance, and the functional background diversity will reduce the negative impact of separation. However, the result is not generated sufficient statistical evidence. Problem with low variance in data might obscure the relationship. Although analysis covers sufficient numbers of observations, aggregated data on such variables were in low variance due to using standardize index. Moreover, multicollinearity between functional diversity and cognitive diversity might contribute to the unexpected result.

A similar result also appeared from the interaction between cognitive diversity and tenure diversity toward firm performance (t = -.039, *p* > .10). The hypothesis predicted that both variables would worsen organizational outcomes. TMTs with higher diversity in separation will strongly disagree with each other. If such a condition occurs in a high disparity team, personal conflict may be triggered. However, the prediction is not supported by data. A similar result also appeared on the relationship between cognitive diversity and age diversity toward firm performance.

Interaction between functional background diversity and tenure diversity is significant (t = 2.20, *p* < .10). This study predicted that high performance could be achieved when tenure diversity is low and functional background diversity is high. However, the result generates an inverse relationship. It appears that the positive impact of tenure diversity on performance is strengthened by a high score on functional background diversity (t_{direct}: 2.00, $t_{interaction}$: 2.20). The most favorable condition would be high tenure diversity and high functional background diversity. The interaction effect of functional diversity in the relationship between age diversity and firm performance supports the hypothesis (t = -2.46, *p* < .10). The analysis confirms the prediction that the functional background will dilute the negative impact of age diversity and firm performance (t_{direct}: -2.63, $t_{interaction}$: -2.46). In other words, the negative impact brought by age diversity could be alienated by high functional diversity. Functional diversity equips teams with diverse perspectives and information in decision making. Such a condition could reduce tension caused by age disparity among executives. Interdependence among members due to having distinct functional expertise might also reduce personal conflict among members since each other possesses a unique power. Therefore, the best condition would be low age diversity and high functional background diversity.

DISCUSSION AND CONCLUSION

This study examines the interaction effect among different kinds of TMT diversity toward firm performance in banking companies listed in Indonesian Stock Exchange from 2011 – 2017. Although focused on interactional effects, the direct relationship between each diversity revealed exciting results. Tenure diversity that theorizing to deliver adverse outcomes turns out to impact performance positively. Consistent with many previous studies, age diversity negatively affected company

performance. Cognitive diversity and functional background diversity are not directly associated with firm performance.

Although having no impact on the direct model, functional background diversity is effectively moderated dynamic team processes. The variable delivers positive contributions either in alienating negative impact or strengthen the positive effect. Result concluded that an ineffective team that suffered from disparity caused by age diversity could be optimized if each member has distinct functional experiences. It has practical implications on how the composition of top-level management should be arranged. A team should consist of members from the same generation in order to reduce power discrepancies. At the same time, diverse expertise among members should be focused on increasing performance or to weakens the unfavorable effect of disparity.

Functional background diversity also has crucial roles in strengthened the positive impact of tenure diversity and firm performance. It implied that the teams should incorporate diverse tenure members; it also needs to provide the team with diverse knowledge and expertise. Tenure diversity might provide teams with knowledge sharing from more experienced members, and at the same time, complement each other with different perspectives and information.

This study has a problem with multicollinearity in cognitive diversity and functional background diversity. Although it was solved by employing separate analysis, this condition might limit the model's prediction power. Further study needs to consider alternative cognitive diversity measurements, such as using direct questions to executives, which might better cover the reality of cognitive diversity among executives. Other variables classified as separation, variety, and disparity should be considered in future studies. Further consideration of the previous classification also needs to be re-examined, such as tenure diversity, which was regarded as disparity and produces negative impacts might be able to categorize in different classifications.

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