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Submission date: 14-Mar-2023 05:25PM (UTC+0700)
Submission ID: 2036926402
File name: i___et__al_The___Mediating_Role_Adop_E-Banking_Revision__OK.docx (91.41K)
Word count: 8356
Character count: 47264

Mediating Role of Adoption of E-Banking Technology Innovation Between Top Management Team Diversity and Performance: Evidence from Commercial Banks in Indonesia

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The majority of research on the relationship among the members of top management team (TMT) directly tests the relationship between TMT diversity with performance, and research results are relatively mixed. This research is a quantitative study that aims to empirically examine the effect of TMT diversity on gender, age, and educational specialization background in the context of performance, through the adoption of e-banking innovation technology. Top level management is defined as the top executives who have a direct influence t on the formulation of the strategy. In the two-tier system of governance, TMT is defined as directors. The population in this study is commercial banks registered at Bank Indonesia during the period 2011-2016. The samples in this study consist of 54 banks with 324 observations. In this study, the observations of data used panel data sets with estimated parameters of the direct influence model using the GLS-RE method, whereas the indirect effect testing uses Two-Stage Least Square (TSLS). The results of gender diversity prove positive effect on the adoption of e-banking technology innovation, while age diversity shows a negative effect on the adoption of e-banking technology innovations. The TSLS regression results show that the adoption of e-banking technology innovation is proven to mediate the relationship between age diversity and educational specialization background on performance. The results thus provide support for the upper echelons theory.

Key words: *top management team, diversity, adoption of e-banking, technology innovations, performance.*

Introduction

ASEAN Economic Community for the banking sector will be at the start in 2020. As a regulator, The Financial Services Authority (OJK) views that the national banking industry still needs to improve in order to be able to compete with other banks from the Southeast Asian region (Kompas.com, 2016). One of the aspects that must be considered is the low performance of the national banking sector in terms of efficiency, where national banks occupy efficiency level of the two lowest compared to the four others states (Philippines, Thailand, Malaysia, and Singapore) (Bank Indonesia, 2017). In terms of efficiency, bank performance is one factor that must be considered because inefficient bank conditions can affect bank performance in terms of profitability (return on assets [ROA], return on equity [ROE] and net interest margin [NIM]) (Rahman *et al,* 2015) and reduce bank competitiveness (Muljawan et al, 2014). On the other hand, in the digital era banks are faced with situations of rapid technological development, changes in customer behavior patterns in doing the transactions, the proliferation of financial technology (*fintech*) both for payments and funding or peer-to-peer (P2P) lending where the value of the transaction from 2016 to 2017 has increased by 24.6 percent or from Rp15.6 billion to Rp18.6 billion (Kompas.com, 2018). These conditions require bank management to be able to formulate and implement appropriate business strategies that discourage the customers to switch (Brown et al, 200 ; Barusman and Yusuf, 2010).

In its development, electronic banking (e-banking) is considered as a strategy that can increase effectiveness, productivity and efficiency while increasing revenue through a better sales system in the digital era (Simpson, 2002; Kurnia et al, 2010; Barusman and Yusuf, 2010). E-banking is a service that allows bank customers to obtain information, communicate and conduct banking transactions via electronic media, such as automatic teller machine (ATM), electronic data capture (EDC) or point of sales (POS), internet banking, SMS banking, mobile banking, e-commerce, phone banking, and video banking (PBI No. 9/15/PBI/2007; OJK, 2015). In the context of banking, some researchers use the term adoption to describe the use or application of information technology by banks in e-banking services including adoption of internet banking (Sullivan, 2000; Bauer et al, 2006; Hernando et al,2007),adoption of e-banking (Oyewole et al, 2013; Siddik et al, 2016),adoption of e-payment such as ATM, internet, POS, and m-banking (Morufu, 2016).

Contingency theory indicates that organizational performance (for example, company performance) is a consequence of "fitness" or a match between two or more factors such as compatibility between the organizational environment, strategy, structure, system, style, and culture. Structural contingency theory tends to focus more on the suitability between organizational context and structure to explain performance (Van de ven and Drazin, 1984). The right strategy is one that is appropriate with the context (Laela, 2014). The appropriateness of the strategy with the context will have a positive impact on performance (Venkatraman and Prescott, 1990). Some previous literature identified the context in question is environmental

conditions (Venkatraman and Prescott, 1990), environmental and organizational (Hofer and Schendel, 1978), as well as managerial characteristics (Gupta and Govindarajan, 1984).

Related to the e-banking strategy, Kurnia et al, (2010) using a technology-organization-environment (TOE) framework (Tornatzky and Fleischer, 1990) developed from organizational contingency theory identifies three context variables that can affect the adoption of e-banking at the bank, namely technological context, organizational context, and external environmental context. In the organizational context, company size, top management support, and financial and human resources are context variables that can have influence on e-banking adoption. With the same framework, and based on several theories of innovation diffusion, Thong (1999) adds an identifiable context element related to the adoption of technological innovation in an organization, namely decision maker characteristics.

Previous literature which connects decision maker characteristics with the adoption of technological innovations generally emphasizes the individual characteristics of the CEO (Thong, 1999; Hameed and Counsell, 2012), the characteristics of top managers (Damanpour and Schneider, 2006) and middle manager (Larsen, 1993). Damanpour and Schneider (2006) state that top managers often make the final decision to adopt technological innovations based on internal organizational needs or environmental changes. Hameed and Counsell (2012) prove that CEOs' characteristics, including CEOs' innovativeness and CEOs' IT knowledge can affect the decision of adopting information technology in an organization.

Chuang et al, (2009) and Awa et al, (2011) specify less personal characteristics (individuals) of top management, but more on work groups, such as on diversity in the top management team (TMT) as variables that can affect the adoption of information technology. Diversity issues related to TMT in the structure of corporate governance has been a concern for regulators in various countries, including Indonesia. In Indonesia the issue of TMT diversity is regulated in the OJK Circular No. 32/SEOJK.04/2015 concerning governance guidelines for public companies. The governance of companies in Indonesia including banks, adheres to a two-tier governance system. In contrast to countries that adopt a one-tier system, in a two-tier system, there are distinctions between the supervisory and management functions. The board of commissioners is the board of directors in the one-tier system. While in the two-tier system, shareholders will appoint a group of company operations managers (management) represented by the board of directors and a group of supervisors called the board of commissioners (Budiarti et al, 2014).

In the rules concerning commercial banks governance (POJK No.55/POJK.03/2016), it is explained that directors are the corporate organs which are fully responsible for the management of the bank, therefore, the board of directors is the TMT in the bank. TMT is defined as top executives who have a direct influence on strategy formulation (Finkelstein and Hambrick, 1996; Nielsen, 2010). Whereas diversity is defined as the sum of collective

differences among the members in a social unit (Harrison and Sin, 2006). The diversity in TMT can be divided into two types, namely observable diversity such as gender or age diversity and less visible diversity such as level of education, educational background, functional, or tenure (Milliken and Martins, 1996).

Previous studies related to the effect of TMT diversity on performance have been conducted (Mutuku et al, 2013; Diaz Fernandez et al, 2014; Tanikawa et al, 2017), but the research results are still mixed. Some researchers conclude that the mixed results are possible because of mediating or intervening variables that must be further investigated to reveal when and how TMT diversity can affect an organization's performance (Kochan et al, 2003; Olson et al, 2006; Mutuku et al, 2013). Based on upper echelons theory (Hambrick and Mason, 1984), Miller et al, (1998) and Carpenter (2002), it is predicted that factors that allegedly can mediate the impact of diversity of directors (TMT) on company performance are variables related to the firm's strategy.

In Indonesia, the research related to diversity has been conducted including Setiyono and Tarazi (2014) with samples of commercial banks in Indonesia in 2001-2011. The diversity object in the study is related to board members. It is not explained more specifically whether it is related to the diversity of the board of commissioners or directors, so the research does not emphasize the TMT group, which in this case is the level of directors. The research also has not considered the existence of different roles between directors and commissioners. In addition, previous studies related to diversity in performance with bank samples (including Setiyono and Tarazi, 2014; Mutuku et al, 2014) have not considered the role of mediating variables in seeing the effect of diversity on bank performance. If viewed from the testing side, most of the studies partially tested each diversity variable (including: gender, age, tenure, and education) on performance (including: Diaz Fernandez *et al,* 2014; Tanikawa et al, 2017).

To fill this gap, this study aims to empirically examine the effect of TMT diversity on performance through the strategy mediating variables, such as the adoption of e-banking technology innovation. Thus, the main question in this study is whether the diversity of TMT in gender, age, and educational specialization background will affect the performance through the adoption of e-banking technology innovation. This study focuses on the adoption of e-banking technology innovation as a mediating variable, because this variable is one of the strategies used by banks in facing competition in the digital era (Adapa, 2010; Salehi and Alipour, 2010). While TMT diversity in this study consists of a diversity of gender, age, and educational specialization background. Upper echelon theory states that corporate results which include strategic choices and performance levels can be partially predicted from the background characteristics of the top management team (TMT) in the company (Hambrick and Mason, 1984).

This study provides a theoretical contribution to the literature on diversity and governance by providing a better understanding of how the relationship betw diversity of directors (TMT) in gender, age, and background pecialization of education on firm performance. As mentioned earlier, the studies that analyze the relationship between diversity of TMT and firm performance have yielded mixed results. Therefore, it is important to investigate the mediating or intervening variables in the relationship between TMT diversity and firm performance because this ationship might be complex and indirect (Carpenter, 2002; Olson et al, 2006). Consequen , this study will expand the literature by providing evidence of variables that affect the rela ship between diversity and performance, such as the strategy variables associated with the adoption of e-banking technology innovation as a mediating variable.

The rest of this paper is presented as follows: Section 2 theory and hypotheses, Section 3 methodology, Section 4 results, Section 5 discussion, and Section 6 conclusion.

eory And Hypotheses

Upper Echelons Theory

Upper echelons theory hypothesi s that the top management characteristics affect the outcomes of the organization (Hambrick and Mason, 1984), which includes strategic choices. The experiences of the board of directors who are the TMT in the organization, the values and the personality traits have major influences on the interpretation of the situation at hand and affect decisions regarding the choice of strategy. As a result, strategic choices are generally more affected by components of behavior and reflect the idiosyncratic decision makers, such as the cognitive basis. Hambrick and Mason (1984) argue that every decision maker or in this case usually called director carries a group of "givens". The givens reflects the cognitive basis of decision makers which includes knowledge or assumptions about future events, knowledge of alternatives, and knowledge of the consequences inherent in alternatives. Thus, this theory can be d to understand how management makes strategy decisions based on its characteristics, which in turn will have an impact on organizational performance.

Diversity in Top Management Team (TMT)

Company performance is a reflection of the characteristics and TMT actions (Hambrick and Mason, 84). One of the characteristics of top management is related to TMT diversity. Diversity refers to differences among individuals on any attributes that can lead to the perception that other people are different from themselves (Williams and Knippenberg, 1998). TMTs are defi d as dominant coalitions or influential actors in an organization (Pettigrew, 1992), or top executives who have a direct influence on strategy formulations (elsen, 2010). Some studies limit TMT at the top two levels of organizational management (Wiersema and Bantel, 1992; Finkelstein and Hambrick, 1996). The previous studies on the

TMT diversity (Miliken and Martin, 1996) classify the diversity of TMT in the diversity that can be observed (observable diversity) (among others: gender and age) and less could be observed (less visible diversity) (among others: education, functions, work, and a range of industrial experience or tenure).

The research related to diversity in the TMT is generally built on the upper echelons theory (Hambrick and Mason, 1984) and resource dependence theory (Pfeffer and Salancik, 1978). Conceptually, diversity is usually defined as the differences among TMT members associated with background characteristics such as gender, age, education, functional experience, and tenure (Hambrick and Mason, 1984; Milliken and Martin, 1996). There are three theories that are often used by researchers in understanding the relationship between diversity in TMT and performance. They are the theory of social categories, the theory of similarity and the theory of information and decision-making (Williams and O'Relly, 1998). In the perspective of the social category theory and the similarity theory diversity in TMT tends to have a negative impact because it can increase conflict and cause lack of communication within the team. Whereas in the perspective of the information and decision-making theory, diversity in TMT has a positive impact on organizational performance through increasing the skills, abilities, information and knowledge brought by diversity.

Top Management Team Diversity and Adoption of E-Banking Technology Innovation

The adoption of e-banking technology innovation is part of the strategy carried out by banks, so that they remain able to compete and meet customer expectation in the digital era (Adapa, 2010; Salehi and Alipour, 2010). To realize this, it needs a group of top executives who have authority in strategic formulation and can think innovatively. Based on contingency theory, previous literature shows that contextual variables that can affect the adoption of technological innovation in an organization are decision-making characteristics related to diversity in TMT (Chuang et al, 2009; Awa et al, 2011). The heterogeneity in TMT has also been shown to be associated with high levels of creativity and innovation (Bantel and Jackson, 1989; Katz, 1982). The possible benefit of diverse groups is that the various viewpoints of the members lead to diversity, novelty, and completeness in the set of suggested solutions (Hoffman and Maier, 1961).

Previous literature shows that gender diversity in directors leads to more thorough information processing and consideration from different perspectives, and is valuable for tasks that require creative solutions (Van Knippenberg et al, 2004). Gender diversity can increase creativity and innovation due to diverse skills and competence (Baer et al, 2013; Teruel et al, 2013). Gender diversity also has a positive effect on innovation (Díaz-García et al, 2014; Pitcher and Smith, 2001; Teruel et al, 2013).

Concerning age diversity, previous literature explains that age group tends to exhibit the attitudes and values. The diversity of attitudes and values can facilitate creativity of the group, which may have an impact on innovative attitude (Bantel and Jackson, 1989). Younger members of board of directors are considered more flexible, have better appreciation of new concepts and new technologies, and dare to take a higher risk. (Hambrick and Mason, 1984) Shuying et al, (2017) find evidence of the positive influence of age diversity on innovation in government-owned banks.

Miliken and Martin (1996) argue that the background of educational specialization is very relevant to the strategic task. Diversity in educational specialization background will lead to solving problems from different perspectives. In addition, Bantel and Jackson (1989) find a positive influence on the diversity of educational backgrounds to innovation in the bank. Based on the explanation and results of some of the above studies, the authors can take the following hypothesis:

H1 a: TMT gender diversity will have a positive effect on the adoption of e-banking technology innovation.
H1 b: TMT age diversity will have a positive effect on the adoption of e-banking technology innovation.
H1 c: TMT educational specialization background diversity will have a positive effect on the adoption of e-banking technology innovation.

The Mediating Role of Adoption of E-banking Technology Innovation on the Relationship between Directors' Diversity and Performance

Research related to the relationship between diversity of directors (TMT) and performance has been conducted, but the results of the study are mixed. In several studies, TMT diversity can positively affect performance (Marimuthu and Kolandaisamy, 2009), while other researchers find TMT diversity has a negative impact on company performance (Diaz Fernandez et al, 2014). On the variety of research results regarding the diversity of TMT on company performance, it is suspected that there are indirect effects or there are other factors that can mediate the influence of diversity of directors on performance (Miller et al, 1998; Kochan et al, 2003; Gabrielsson and Huse, 2004; Olson et al, 2006; Mutuku et al, 2013). The factors thought to be able to mediate the impacts of the diversity of directors on company performance are strategic choices (Olson et al, 2006). In banking, electronic banking (e-banking) is considered as a strategy that can increase effectiveness, productivity, and efficiency while increasing revenue through a better sales system in the digital era (Simpson, 2002; Kurnia et al, 2010).

Previous literature proves that TMT diversity can positively afffect the level of adoption technological innovation (Chuang *et al,* 2009; Awa et al, 2011). Hasan et al, (2013) finds

evidence that mobile banking and ATM has a positive effect on bank performance. Therefore, adoption of e-banking technology innovation can mediate the relationship between TMT diversity and company performance, so the proposed hypothesis is:

H2 a : Adoption of e-banking technology innovation will mediate the relationship between TMT gender diversity and bank performance.

H2 b : Adoption of e-banking technology innovation will mediate the relationship between TMT age diversity and bank performance.

H2 c : Adoption of e-banking technology innovation will mediate the relationship between the diversity of TMT educational specialization background and bank performance.

Methodology

Sample

The populations in this study are commercial banks in Indonesia for the period 2010–2016. Based on the sample selection results, we obtain balanced data panel consisting of 54 banks with 324 observations. The study uses secondary data sources from annual reports, bank websites, bank governance reports or new releases and financial reports. The data used began from 2010, because in 2008 there was a global financial crisis that had a negative impact on economic development, especially banking in Indonesia. Based on data sourced from financial stability studies (BI, 2010; 2011), the negative impact of the global financial crisis on banks occurred in 2008-2009. However, in 2010, the bank's performance began to show improvement, especially in the second half of 2010.

Independent Variable

In this study, the variable diversity of directors consists of diversity in gender (DIV_GEN), age (DIV_AGE) and educational specialization background (DIV_LTP). Gender diversity and educational specialization background diversity are calculated using the Blau Index. The Blau Index is described as an ideal model for capturing diversity and variation in groups of people (Harrison and Sin, 2006; Miller et al, 2009). To measure the level of diversity using the Blau Index, the following mathematical equation used: Diversity level = 1- $\sum(Pi)^2$, where P is the percentage of directors in each category and i is the number of categories diversity represented by the board. Educational specialization background variables are categorized into five categories, namely economics and business, law, engineering, science and others, in accordance with prior research on the diversity of educational specialist background (Carpenter and Fredrickson., 2001; Diaz Fernandez *et al,* 2014). As for the diversity of directors' age we used coefficient of variation, which was calculated as follows: Variation Coefficient = (σ / x), where σ is the standard deviation and x is the mean mean (Bantel and Jackson, 1989; Wiersema and Bantel, 1992; Bedeian and Mossholder, 2000).

Mediating Variable

The adoption of e-banking technology innovation (Adop_ E-banking) shows the existence of e-banking at banks. E-banking is a service that enables bank customers to obtain information, communicate, and conduct banking transactions through electronic media such as ATM, electronic data capture, internet banking, SMS banking, mobile banking, e-commerce, phone banking and video banking (OJK, 2015). In this study for the size of e-banking technology innovation adoption, we use the number of e-banking technology innovation adoptions in banks as described in Sutarti et al, (2019). Each type of e-banking service was given a value of 1. If a bank adopted the entire e-banking technology innovation; the maximum value would be 8 (eight).

Dependent Variable

Bank performance in this study use a measure of financial performance in terms of profitability, which is measured using a ratio approach, namely return on assets (ROA) as previous research on the effect of technology adoption on performance (Akhisar et al, 2015). Based on Bank Indonesia Circular Number 3/30/DPNP dated December 14, 2001, the following is the calculation of ROA: ROA is derived from profit before tax, divided by the average total assets.

Control Variable

The control variable in this study consists of bank size (SIZE). The bank size in this study is obtained from the log of total natural assets (Oyewole et al, 2013). LIST indicates whether the bank is registered or not on the IDX. Based on Setiyono and Tarazi's research (20), bank size is given a value of 1 if the bank is listed on a stock exchange and 0 for otherwise. A bank listed on the stock exchange is expected to be monitored more closely and vail to stronger market discipline that leads to better performance. GOV: Dummy variable 1 if it is a state-owned bank (BUMN) (Shuying et al, 2017)), and 0 for otherwise; BPD: Dummy variable the bank is owned by the regional government (BPD) and 0 for otherwise. Competition: the size of the level of competition at the bank level, the ability to compete seen as price cost margins.

The research model used for hypothesis testing in this study is shown in the following equation model:

Model 1 is used to test the H1a, H1b, and H1c hypotheses:

$$\text{ADOP\_E-Banking} = \delta 0 + \delta 1 \text{DIV\_GENit} + \delta 2 \text{DIV\_AGEit} + \delta 3 \text{DIV\_ LPT it} + \delta 4 \text{SIZEit} + \delta 5 \text{LISTit} + \delta 6 \text{GOVit} + \delta 7 \text{BPDit} + \delta 8 \text{Competition}_{it} + \varepsilon it. \quad (1)$$

Model 2 is used to test the hypothesis H2a, H2b and H2c :

$$\text{PERF}_{it} = £0 + £1 \widehat{\text{ADOP\_E} - \text{Banking}}_{it} + £2 \text{SIZE}_{it} + £3 \text{LIST}_{it} + £4 \text{GOV}_{it} + £5 \text{BPD}_{it} + \varepsilon_{it} \quad (2)$$

Where:
PERF = Banking performance measured by return on assets (ROA) bank i in year t.
DIV_GEN_{it} = Gender diversity of the members of the board of directors of bank i in year t.
DIV_AGE_{it} = Age diversity of members of the board of directors of bank i in
DIV_LTP_{it} = Diversity of educational backgrounds (majors) from members of the board of directors of bank i in year t.
$SIZE_{it}$ = The size of the bank obtained from the natural total asset Log in bank i in year t.
$LIST_{it}$= Indicate whether or not the bank is registered at year t on the Indonesia Stock Exchange (IDX).
GOV_{it} = Type of bank ownership i in year t. dummy 1 if there is central government ownership in the bank and 0 otherwise
BPD_{it} = Type of bank ownership i in year t. dummy 1 if there is local government ownership in the bank and 0 otherwise
Competition = The measure of competition level at corporate level for bank i in year t

Analysis Method

The data analysis used in this study was the panel data model and used the Chow-Hausman test to select the best regression model among the pooled least quare, fixed effects and rando effects. To test the hypothesis H1a, H1b and H1c, which predicts that diversity on TMT is positively related to adoption of e-banking technology innovation. We regressed the panel data analysis estimator by using Gene zed Least Square (GLS) method. Meanwhile, to test the hypotheses H2a, H2b an H2c, such as the mediating role of the adoption of e-banking technology innovation on the relationship between diversity of directors and performance, the testing used Two-Stage Least Square (TSLS). Before estimating TSLS, first it was tested whether there would be endogeneity problems in the model. The heteroscedastic violations would be treated by adding the option ", vce (robust)" that is robust heteroscedasticity when running a regression command in STATA (Cameron and Trivedi, 2009). For testing classic assumptions for multicollinearity, we used the VIF (Variance Inflation Factor) test. Based on the VIF test for each test model, there were multicollinities for several test variables. The violations of multicollinearity in this study were treated by centering (Tanikawa et al, 2017).

Result

The study was conducted on 54 selected banks registered with Bank Indonesia from 2010-2016 with 324 observations. The 54 banks con ted of 4 state-owned banks, 17 BPDs and 26 private banks and 7 sharia commercial banks. This study used data from the financial statements, annual reports, governance reports, and the banks' websites listed on Bank onesia in the period of 2010-2016. Table 1 explains multivariate analysis, which consists of means, standard

deviations and correlations for the variables used in explaining the effect of TMT diversity on performance through the adoption of e-banking technology innovation.

Table 1 : Means, Standard deviations and Intercorrelations

No	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	ROA	0,01	0,02	1									
2	Adop_E-Banking	5,12	2,04	- 0,22 ***	1								
3	DIV_GEN	0,18	0,19	-0,02	0,19 ***	1							
4	DIV_AGE	0,09	0,04	-0,13 **	-0,04	0,22 ***	1						
5	DIV_LTP	0,32	0,21	0,11 **	0,14 **	0,21 ***	0,16 **	1					
6	SIZE (log_aset)	13,3	0,66	-0,20 ***	0,60 ***	0,14 **	-0,02	0,16 **	1				
7	LIST	0,54	0,49	0,05	0,54 ***	0,23 ***	0,20 ***	0,21 ***	0,45 ***	1			
8	GOV	0,12	0,33	0,27 ***	0,31 ***	-0,19 ***	-0,19 ***	-0,02	0,42 ***	0,02	1		
9	BPD	0,31	0,46	-0,72 ***	-0,51 ***	-0,29 ***	-0,21 ***	-0,39 ***	-0,25 ***	-0,26 ***	-0,26 ***	1	
10	Competition	0,82	0,18		0,13 **	0,02	0,10*	0,13**	-0,15 **	-0,07	-0,07	-0,11 **	1
***, **, * *represent the 1%, 5%, 10% confidence level was significantly*													

The regression test in Model 1, as presented in Table 2 below, was used to test the hypotheses H1a, H1 b, and H1 c which were to see the effect of TMT diversity on the adoption of e-banking technological innovations. Regression results showed that gender diversity (DIV_GEN) had a positive effect on the number of technology adoptions ($\beta = 0,822$ $p < 0.05$), so that H1a was accepted, while age diversity (DIV_AGE) had a negative effect on the number of adoption of e-banking technology innovations. Although significant, the results were opposite in the direction so that H1b was not accepted. The value of the coefficient and p-value for age diversity were ($\beta = -5.106$, $p < 0.05$. The regression results showed that the variable of diversity of educational specialization background did not affect significantly by the negative direction towards the adoption of e-banking technology innovation, while value of the coefficient and p-value for the diversity of educational specialization background were ($\beta = -0.376$, $p > 0.1$). Based on the results of regression in Model 1, there were four control variables proven to have significant positive effects on the number of adoptions of e-banking technology innovation (Adop_E-Banking), such as bank size (SIZE) ($\beta = 1,971$, $p < 0.01$), bank listed on the IDX (LIST) ($\beta = 0.911$, $p < 0.01$), and competition (COMPT) ($\beta = 1,289$, $p < 0.01$). Meanwhile one control variable, BPD, was proven to have a negative effect on the adoption of e-banking technology innovations ($\beta = -1,067$, $p < 0,01$).

Table 2: The Regression Results of Model 1

ADOP_E-Banking = δ0 + δ1DIV_GENit + δ2DIV_AGEit + δ3DIV_ L PT it + δ4SIZEit + δ5LISTit + δ6GOVit + δ7BPDit + δ8Competitionit + εit (1)			
Variable	Model 2 (Dep Var: Adop_E-banking)		
	Prediction	coefficient	P-Value
DIV_GEN	(+)	0,822	0.034**
DIV_AGE	(+)	-5,106	0,005***
DIV_LTP	(+)	-0,376	0,177
SIZE	(+/-)	1,971	0,000***
LIST	(+/-)	0,911	0,000***
GOV	(+/-)	-0,153	0,785
BPD	(+/-)	-1,067	0,011**
Competition	(+/-)	1,289	0,000***
Cons		3,205	0,000
N	324		
R2	53,57%		
Chi2	190,77***		
***, **, * *represent the 1%, 5%, 10% confidence level was significantly*			

Prior to the Two-Stage Regression (TSLS) estimation, an endogeneity test was carried out using the Hausman test between variables of gender diversity (DIV_GEN), age diversity (DIV_AGE), diversity of educational background (DIV_LTP), and e-banking technology adoption variable (Adop E-Banking). Based on the results of the Hausman test using STATA software, the value obtained was (endog-option: Endogeneity test of endogenous regressors: 66,859 Chi-sq (1) P-val = 0.0000). The Hausman specification test results provide evidence of the existence of e-banking adoption as an intervening (mediation) variable in model 2 fulfilled.

The Two-Stage Regression (TSLS) in Model 2 was used to test H2a, H2b and H2c whis is the effect of TMT diversity on performance through adoption of e-banking technology innovation (Adop_E-Banking). This is shown in Table 3 below. The TSLS regression results showed that the adoption of variable e-banking technology innovation mediated the effects of TMT diversity which related to the diversity in age and educational specialization background. It meant H2b and H2c were accepted. The value of the indirect coefficient of influence for age diversity (DIV_AGE) on performance in Model 2 was (£ 1 * δ2) = (-0,160 ***) x (-6,695 * **) = 1,0712. While the value of the coefficient of indirect effect for the diversity of educational specialization backgrounds (DIV_LTP) on performance in Model 2 was (£ 1 * δ3) = (-0,160 ***) x (-1,066 * **) = 0,170 5. However, the results TSLS regression failed to prove the mediating role of e-banking technology innovation adoption in seeing TMT gender diversity relationships, so that H2a was not accepted.

Table 3 : The Two-Stage Regression (TSLS) of Model 2

$$PERF_{it} = £0 + £1\widehat{ADOP\_E-Banking}_{it} + £2SIZE_{it} + £3LIST_{it} + £4GOV_{it} + £5BPD_{it} + \varepsilon_{it} \quad (2)$$

First-stage G2SLS regression (Adop_E-banking)		
F Prob>F =0.000; Group = 54; Number of obs = 324;		
Variable	Coef	P-Value
DIV_GEN	0,450	0,308
DIV_AGE	-6,695	0,000***
DIV_LTP	-1,063	0,007***
SIZE	1,389	0,000***
LIST	0,746	0,000***
GOV	0,112	0,701
BPD	-1,498	0,000***
Competition	1,688	0,000**
Cons	-13,918	0,000
G2SLS random effects IV regression (ROA)		
Prob>F =0.01; R-*square* = 0,05; *Groups* = 54; Observation =324		
Variable	Coef	P-Value
(Constant)		
Adop_E-Banking	-0,016	0,000***
SIZE	0,027	0,000***
LIST	0,006	0,210
GOV	0,006	0,192
BPD	-0,009	0,085*
Cons	-0,267	0,000
***, **, * *represent the 1%, 5%, 10% confidence level was significantly*		

Discussion

The main objective of this study is to explain the effect of TMT diversity (gender, age, and educational background) on performance, which is mediated by the adoption of e-banking technology innovation variables. The regression results showed that gender diversity has a positive effect on the adoption of e-banking technology innovations. The results of the study support prior researches (Chuang et al, 2009; Awa et al, 2011), which show the positive influence of gender diversity on the adoption of technology. There are positive influences that can occur, because gender diversity in banks will result in a high innovative attitude on TMT (Pitcher and Smith, 2001). Therefore, TMT will think more strategically about how the banks under their management are able to compete in the market and are able to provide quality services in meeting customer needs in the digital age.

While the results of the study indicate a significant influence of TMT's age diversity on the adoption of e-banking technology innovation with a negative direction, this shows that the higher level of age diversity, the motivation of TMT in developing various services in the digital age will decrease, as indicated by the low number of adoption of e-banking technology innovation. The results support the findings of Olson et al, (2006), which shows the negative impacts of age diversity on strategic decisions in the company. The results also show the negative effect on innovation as prior research (Shuying et al, 2017). The negative influences

can be due to age diversity in TMT which tends to increase conflict in decision-making and it is possible that age diversity supports affective conflict (Olson et al, 2006). Conflicts can occur because of efforts to maintain "self esteem" of each age group (Williams and O'Relly, 1998). Another possible reason for the negative effects of age diversity on the adoption of e-banking technology innovation is that it depends on the diversity of the TMT environment. Shuying et al, (2017) finds evidence about the effect of the diversity of age on innovation with different both directions and significant between a state-owned bank and non-government bank.

In this research, the author has tried to look at the effects of the environment in influencing the impact of TMT diversity on innovation adoption, which is by dividing the sub-sample of banks by classifying banks by big size, which are above the median, and the group of small banks that the size is below the median value. This was based on evidence that there is a positive influence of bank size on the adoption of e-banking technology innovation. In the sub-sample test results (Table 4 below), it is evident that there are different significance results between the effects of age diversity on the adoption of innovations in banks in the large size groups and small bank groups. In banks that were categorized as small banks, age diversity has very significantly negative effect on the adoption of e-banking technology innovation. This shows that in a small size bank environment where support for the adoption of technological innovations is low, age diversity tends to cause conflict. The conflicts might occur because different ideas and perspectives are considered as threats to effective functions (Valls et al, 2016), so that they will have a negative impact on innovation adoption decisions.

Regarding the impacts of the diversity of educational specialization background on the number of adoptions of e-banking technology innovation, the results of the regession showed a negative direction, although not significant. Therefore, the results of the study do not support previous research which found a positive effect on the diversity of educational specialization background on bank innovation (Bantel and Jackson, 1989). The absence of impact of educational specialization background diversity with the samples of commercial banks in Indonesia on the adoption of e-banking technology innovation can occur because of the high diversity of educational specialization backgrounds is more dominated by diversity in the form of social science education background. Therefore, the expected diversity contribution from the technological background at the bank does not emerge.

Although partially, the results of the regressions showed that there is an influence with a negative direction between age diversity and educational specialization background on the adoption of e-banking technology innovation. However, TSLS regression results proves the indirect effect of age diversity and educational specialization background on performance, through adoption of e-banking technology innovation in a positive direction. A possible reason is although the diversity brings a negative impact on decisions regarding the number of technological innovation adoption of e-banking, the results of the decision are not solely affected by the diversity. The impact is also influenced by the environment where diversity of

TMT is happening. Therefore, innovative attitudes arising from the diversity in TMT continues to emerge with the use of the maximum number of adoption of available e-banking technology innovations, so that it has a positive impact on bank financial performance as measured by ROA. Based on the results, the overall study shows that the diversity of TMT has an impact on bank strategy and performance so that the findings support the upper echelons theory (Hambrick and Mason, 1984). Consequently, this finding is expected to be useful for other researchers and further theory development.

Table 4 : Comparison of regression results of Model 1 on banks with samples of big size bank group and small size bank group

ADOP_E-Banking = δ0 + δ1DIV_GENit + δ2DIV_AGEit + δ3DIV_ L PT it + δ4SIZEit + δ5LISTit + δ6GOVit + δ7BPDit + δ8Competition it + εit (1)

Independent Variable	Prediction	Dependent Var : Adop_E-Banking			
		Bank group_Big Size		Bank group_Small Size	
		Coefficient	P-Value	Coefficient	P-Value
DIV_GEN	+	-0,594	0,139	1,441	0,013**
DIV_AGE	+	-0,900	0,334	-7,074	0,014**
DIV_LPT	+	0,391	0,201	-0,788	0,088*
Control Variable					
SIZE	(+/-)	1,609	0,000***	2,036	0,000***
LIST	(+/-)	0,531	0,224	1,424	0,001***
GOV	(+/-)	-0,003	0,3996	1,701	0,120
BPD	(+/-)	-1,051	0,073*	-1,129	0,055*
Competition	(+/-)	0,764	0,232	0,848	0,078*
Cons		-16,828	0,002	-22,447	0,002
N		162		162	
R^2		35%		45%	
Chi2		41,86***		65,02***	

***, **, * *represent the 1%, 5%, 10% confidence level was significantly*

Conclusion

The estimation results using panel data indicates that TMT's gender diversity significantly and positively aff the decision on the number of e-banking technology innovation adoption; meaning that the higher the gender diversity index in banks, the hig the bank's decision to adopt e-banking technology innovation. Meanwhile age diversity had a si ficant and negative effect on decisions on the adoption -banking technology innovations. The regression results showed a negative direction of the effect of the diversity of educational specialization background on the adoption of e-banking technology innovation, although it is not significantly. Based on the results of an investigation using Two-Stage Least Square (TSLS), this study found in ct effect of the diversity of age and educational background on performance through the adoption of e-banking technological innovation.

The results of the study have several implications. Firstly for companies, it can provide a deeper understanding, related to the benefits of the diversity of directors (TMT) in the company in order to support the performance based on certain characteristics. This can also help companies in bulding directors team (TMT) that can support the strategic decision-making process and innovation or creativity so that it can improve the company's performance, particular in banking sector. The research can also provide an overview to companies on the benefits of e-banking technology innovation adoption on their performance, especially at banks. Secondly for regulators, the results of this researc an be taken into consideration in relation to policies concerning company organs, especially board of directors in supporting the implementation of better corporate governance in Indonesia. In addition, the findings in this empirical study might be used as an evaluation material for th regulators in providing empirical input on how the usefulness of policies concerning board of directors (OJK Circular Letter No. 32/SEOJK.04/2015) relating to their roles in making strategic decisions in companies, which will have an impact on company performance. Thirdly, for investors, the results of this research can be taken into consideration in predicting a company performance based on certain characteristics of the directors. It can be useful in predicting the number of adoptions of e-banking technology innovations and their usefulness in banks.

This study has several limitations, among others; firstly, the research used only a sample of a sample of commercial banks in Indonesia. Future studies might use cross-country samples. Secondly, the study used only a measure of the number of adoptions of e-banking technology innovation as a mediating variable to show bank strategy. Future studies can use other measures such as the us lness or the use of e-banking technology innovation adoption. The other option is to gather primary data in the form of a questionnaire related to the use of e-banking technology innovation adoption. It is also possible to use other mediating variables such innov n or other strategy measures for future research. The use of usefulness measures related to the adoption of e-banking technology innovation will be very useful in providing explanatory support when a negative effect of diversity is found on strategies (for

example, age diversity) but the results of indirect effects via these variables indicate a positive and significant direction, which has not been explained empirically in this study. Third, the research only uses gender, age, and background specialization of education related diversity variables; further research can consider other types of diversity (education level, functional, or tenure)

Acknowledgements

We would like to acknowledge the financial support provided by Universitas Indonesia through the PITMA A grant. We would also like to thank the reviewer team at the 4th Asia Pacific Research in Social Sciences and Humanities-Universitas Indonesia Conference, who provided input for improving our paper.

REFERENCES

Adapa, S. "Global E-Banking Trends: Evolution, Challenges, and Opportunities. E-Banking and merging Multidisciplinary Processes: Social, Economical and Organizational Models," 2010.

Akhisar, I., Tunay, K.B., Tunay,N, "The Effects of Innovations on Bank Performance: The Case of Electronic Banking Services. World Conference on Technology, Innovation and Entrepreneurship." *Procedia - Social and Behavioral Sciences*, 195 (369 – 375). 2015

Awa, Hart O.,Sunday C., Eze Joseph E., Urieto Benjamin J., Inyang. "Upper echelon theory (UET)". *Journal of Systems and Information Technology*, Vol. 13 Iss 2 pp. 144 – 162, 2011.

Baer, M., Vadera, A.K., Leenders, R. T. & Oldham, G. R. Intergroup competition as a double-edged sword: How sex composition regulates the effects of competition on group creativity. 2013.

Bank Indonesia Regulation No. 19/12 / PBI / 2017 concerning the implementation of financial technology

Bantel, K., and Jackson, S, "Top Management and Innovations in banking: Does Composition of the team make a difference? ". *Strategic Management Journal*, 10, 107-124, 1989.

Barusman and Yusuf S. "Utilization of E-banking in the Banking Industry in Terms of Structure-Conduct-Performance Paradigm in Indonesia". *Journal of Management and Business* Vol. 1 No. October 1: 1–20, 2010.

Budiarti. E., Sulistyowati, C. "Ownership structure and Company Board Structure." *Theoritical and applied management journals*, December, No. 3, 2014

Brown, I., Cajee, Z., Davies, D., & Stroebel, S. "Cell Phone Banking: Predictors of Adoption on South Africa. An Exploratory Study". *International Journal of Information Management,* 23(5), 381-394, 2003.

Carpenter, M.A. "The Implications Of Strategy And Social Context For The Relationship Between Top Management Team Heterogeneity And Firm Performance." *Strategic Management Journal*, 23: 275–284, 2002.

Chuang, T., Nakatani, K. and Zhou, D. "An exploratory study of the extent of information technology adoption in SMEs: an application of upper echelon theory." *Journal of Enterprise Information Management,* Vol. 22 Nos 1/2, pp. 183-96,2009.

Damanpour, F. and Schneider, M. "Phases of the Adoption of Innovation in Organizations: Effects of Environment Organization and Top Managers". *British Journal of Management*, 17 (3), 215-236, 2006.

Díaz-Fernández, M.C.,González-Rodríguez, M.R., Pawlak, M. "Top management demographic characteristics and company performance." *Industrial Management & Data Systems*, Vol. 114 Iss 3 pp. 365 – 386, 2014.

Financial Services Authority (OJK) Regulation No. 55 /POJK.03/2016 About the Implementation of Governance for Commercial Banks, 2016.

Finkelstein, S., and Hambrick, D.C. "Strategic Leadership: Top Executives and Their Effects on Organizations." *West Strategic Management Series,* 1996.

Financial Services Authority (OJK) Regulation No. 55 /POJK.03/2016 About the Implementation of Governance for Commercial Banks, 2016.

Gabrielsson, J. and Huse, M. "Context, behavior, and evolution." *International Studies of Management and Organizations*, 34, 11-36, 2004.

Gupta, A., and Govindarajan, V. "Business unit strategy, managerial characteristics and business unit effectiveness at strategy implementation". *Academy of Management Journal,* 27, 25-41. 1984

Hambrick, D.C., and Mason, P.A."Upper echelons: The organization as reflection of its top managers." *Academy of Managemnet Review*, 9, 193-206. 1984.

Hameed M.A. and Counsell.S.,. "Assessing the influence of Environmental and CEO Characteristics for Adoption of Information Technology in Organizations". *Journal of Technology Management & Innovation* vol.7 no.1 Santiago Mar. 2012

Hasan, S.U., Mamman, A., Farouk, M.A. "Electronic Banking Products And Performance Of Nigerian Listed Deposit Money Banks." *American Journal of Computer Technology and Application* Vol. 1, No.10, November, PP: 138 - 148, ISSN: 2327-2325, 2013.

Harrison, D. A., and Sin, H. P. *What is diversity and how should it be measured?* In A. M. Konrad, P. Prasad, & J. K. Pringle (Eds.), Handbook of workplace diversity, (pp. 191-216). Thousand Oaks, CA: Sage Publications, 2006.

Hofer, C. W. and D. E. Schendel. "Strategy Formulation: Analytical Concepts". St. Paul, MN: West Publishing House. 1978.

Hoffman, R., and Maier, N. "Quality and Acceptance of Problem Solutions by Members of Homogeneous and Heterogeneous Groups." *Journal of Abnormal and Social Psychology*, 62: 401-407, 1961.

Katz, R. "The effects of group longevity on project communication and performance." *Administrative Science Quarterly*, 27(1), 81– 104. 1982

Kochan, T., Bezrukova, K., Ely, R. J., Jackson, S., Joshi, A., Jehn, K., Leonard, J., Levine, D., Thomas, D." The effects of diversity on business performance: Report of the diversity research network". *Human Resource Management*, 42, 3-21, 2003.

Kompas.com. Ahead of the MEA Banking 2020. Accessed March 31, 2019 https://money.kompas.com/read/2016/01/13/131500226. 2016.

Kompas .com. the challenges of the banking industry in the era of digital banking https://sains.kompas.com/read/2018/10/21/151222826/. 2018.

Kurnia, S., Peng, F., Liu, Yi Ruo. "Understanding the Adoption of Electronic Banking in China." *Proceedings of the 43rd Hawaii International Conference on System Sciences*, 2010.

Laela, S.F. "Dynamic Strategic-Fit and Performance: Study on Islamic Banking. *Indonesian Journal of Accounting and Finance* Volume 11 Number 1, June. 2014.

Larsen, T. J. "Middle Managers' Contribution to Implemented Information Technology Innovation". *Journal of Management Information System,* 10 (2), 155-176, 1993.

Marimuthu, M., Kolandaisamy, I. "Demographic Diversity in Top Level Management and Its Implications on Firm Financial Performance:An Empirical Discussion." *International Journal of Business and Management*, Vol 4- No.6, 2009.

Milliken, F, J., and Martin, L. "Searching For Common Threads:Understanding The Multiple Effects Of Diversity In Organizational Groups." *Academy of Management Review*, Vol. 21, No. 2. 402-433,1996.

Miller, C. C., Burke, L. M., Glick, W. H. "Cognitive diversity among upper-echelon executives: Implications for strategic decision processes." *Strategic Management Journal,* 19, 39-58, 1998

Muljawan, D., Hafidz, J., Astuti, RI, Oktapiani, R. "Determinants of Indonesian Banking Efficiency and Its Impact on Credit Interest Calculation". Working Paper, Bank Indonesia. 2014

Morufu, Oladejo. "E-payments adoption and Profitability performance of Deposits Money Banks in Nigeria". *IPASJ International Journal of Information Technology (IIJIT)* Volume 4, Issue 3, March, 2016.

Mutuku, C., Obonyo, P.K., Awino, Z.B."Top Management Team Diversity, Quality of Decisions and Performance of Commercial Banks in Kenya." *Asian Journal of Humanities and Social Sciences* (AJHSS), Volume 1—Issue 3, November - ISSN: 2320-9720, 2013

Nielsen, S. "Top Management Team Diversity: A Review of Theories and Methodologies." *International Journal of Management Reviews*, 2010.

Olson, B.J, Parayitam, S., Twigg, N.W. "Mediating Role of Strategic Choice Between Top Management Team Diversity and Firm Performance: Upper Echelons Theory Revisited." *Journal of Business and Management*, 12, 2; ProQuest pg. 111, 2006.

Oyewole, O.S., Abba, M., El-Maude., Gambo,J." E-banking and Bank Performance: Evidence from Nigeria." *International Journal of Scientific Engineering and Technology* (ISSN : 2277-1581) Volume No.2, Issue No.8, pp : 766-771, 2013.

Pettigrew, A. M. "On studying managerial elites." *Strategic Management Journal*, 13, 163−182, 1992.

Pfeffer, Jeffrey., Salancik, G.R. The external control of organizations: A resource dependence perspective. New York: Harper and Row, 1978.

Pitcher, P., and Smith, A.D."Top Management Team Heterogeneity: Personality, Power, and Proxies." Organization Science, 12, 1–18, 2001.

Rahman. A. N.A. R., Reja, B.A.F.Md. "Ownership Structure and Bank Performance". Journal of Economics, Business and Management, Vol. 3, No. 5, May, 2015 DOI: 10.7763/JOEBM.2015.V3.232

Salehi, M., and Alipour, M. "E-Banking in Emerging Economy: Empirical Evidence of Iran." *International Journal of Economics and Finance,* Vol..2, No.1, February, 2010.

Setiyono B., and Tarazi, A. "Does Diversity of Bank Board Members Affect Performance and Risk? Evidence From Emeging Market." https://hal-unilim.archives-ouvertes.fr/hal-01070988, 2014.

Shuying,W.,Shuijuan,Z., Li bobo. "Effect of diversity on top management team to the bank'sinnovation ability-based on the nature of ownership perspective." *Procedia Engineering*, 174, 240 – 245, 2017.

Siddik, Md. Nur Alam., Sun, Gang., Kabiraj,Sajal., Shanmugan,Joghee., Yanjuan,Cui. "Impacts of e-banking on performance of banks in a developing economy: empirical evidence from Bangladesh". *Journal of Business Economics and Management*, Volume 17(6): 1066–1080, 2016.

Simpson, J. "The impact of the Internet in banking: observations and evidence from developed and emerging markets." *Telematics and Informatics,* 19,315–330,2002.

Sullivan, R. J. "How has the adoption of Internet banking affected performance and risk in banks?". Financial Industry Perspectives, 1-16. 2000.

Sutarti, Syakhroza, A., Diyanty,V and Dewo,S.A. "The Effects Of The Adoption Of E-Banking Technology Innovation On The Performance With The Internal Control Effectiveness As The Moderating Variable: An Evidence From Commercial Banks In Indonesia". *Working Paper*. 2019

Tanikawa,T., Kim,S., Jung,Y. "Top management team diversity and firm performance: exploring a function of age." Team Performance Management: *An International Journal*, Vol. 23 Issue: 3/4, 2017.

Teruel, M., Parra, M.D., Segarra, A. "Gender diversity and innovation in manufacturing and service firms." Universitat Rovira I Virgili, *Working Paper*, 2013.

Thong, J. "An integrated model of information systems adoption in small businesses", *Journal of Management Information Systems*, Vol. 15 No. 4, pp. 27-31. 1999

Tornatzky, L.G., and Fleischer, M. "*The Processes of Technological Innovation"*. Lexington, M.A.: Lexington Books. 1990

Van de Ven, A.H., Drazin, R. "The Concept of Fit in Contingency Theory". Strategic Management Research Center, University of Minnesota. 1984

Van Knippenberg, D., De Dreu, C. K., and Homan, A. C. "Work Group Diversity and Group Performance: An Integrative Model and Research Agenda." *Journal of Applied Psychology*, 89(6), 1008. 2004.

Valls, V., Gonzales-Roma, and Tomas, I. "Linking educational diversity and team performance: Team communication quality and innovation team climate matter." *Journal of Occupational and Organizational Psychology*.2016.

Venkatraman, N. and J. Prescott. Environment-strategy Coaligment: An Empirical Test of Its Performance Implications. *Strategic Management Journal*, *11* (1), 1-23. 1990.

Williams, K. Y., and O'Reilly, C. A."Demography and diversity in organization: A Review of 40 Years of Research." *Res Organ Behav,* Vol. 54, 77-140., 1998.

Wiersema, M and Bantel, K.A."Top management team demography and corporate strategic change." *Academy of Management Journal,* 35, 91-121, 1992.

Williams K, and Knippenberg C." Forty years of diversity research: a review." *In Research in Organizational Behavior*, Staw BM, Cummings LL (eds). JAI Press:Greenwich, CT; 77–140,1998.

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