BOARD CHARACTERISTICS AND AUDIT COMMITTEE DIVERSITIES: EVIDENCE FROM HONG KONG

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Abstract

This study is the first study to examine the relationship between board characteristics and the diversity of audit committee members in Hong Kong after the Asian financial crisis in 2008. Using five dimensions of diversities (education level, ethnicities, experience, gender, and age), we find - for a sample of Hong Kong Hang Seng Composite Index 1,700 firm-year observations between 2010 and 2015 — that board independence, board size, board directorships, and board tenure are important determinants of diversities in audit committee members. In addition, our control variables show that board state ownership, board of directors' political connection, and family members on the board are also important determinants of diversities in audit committee members. The findings suggest that effective board characteristics encourage diverse education levels, age, and gender of the audit committees while discouraging diverse experiences and ethnicities. Overall, consistent with prior studies, our findings suggest that effective board characteristics are important determinants of its oversight quality. Our findings are of potential interest to policymakers, professionals, boards of directors, and academics.

Keywords: Board Characteristics, Audit Committee Diversity, Hong Kong, Oversight Quality

Authors' individual contribution: Conceptualization — K.Y.C. and C.V.C.; Methodology — K.Y.C.; Formal Analysis — K.Y.C.; Writing — Original Draft — K.Y.C.; Writing — Review & Editing — K.Y.C.and C.V.C.; Visualization — K.Y.C. and C.V.C.; Project Administration — K.Y.C.

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1. INTRODUCTION

Board diversities have attracted substantial attention (Bernile, Bhagwat, & Yonker, 2018) not only among policymakers but also among academics. Many countries have suggested that board diversities should be implemented as a good corporate governance practice. For example, in Norway, firms are required to have gender diversity on boards since 2008. In Germany, firms are required to have female directors on the board. Since 2016, female directors must be at least 30 percent of specified German companies' supervisory boards. In Norwegian, if the board has more than nine directors, both genders must constitute at least 40 percent. In Spain, firms are legally required to

comply with the board diversity rules while in Finland and Denmark, the issues of board diversity have been addressed in Corporate Governance Codes (Rose, Munch-Madsen, & Funch, 2013).

Our coniecture that diversities foster the effectiveness of decision-making in the audit committees is similar to the agreement of Adams, Almeida, and Ferreira (2005), who find that chief executive officer (CEO) power poses risk to a firm. Adams et al. (2005) opine that powerful CEOs could make unchecked decisions, resulting in extreme outcomes and greater idiosyncratic risk. We argue that homogeneity of preferences and views among the audit committees would lead to unchallenged decisions as similar audit committee members may approve their decisions with less scrutiny.

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We, therefore, conjecture that greater audit committee diversities should lead to less volatile oversight quality on financial reporting.

Hong Kong is of interest because Hong Kong is a country with different cultural traditions and aspirations (Jaggi, Leung, & Gul, 2009). Additionally, Hong Kong is characterized by concentrated sharing with many traditional family-owned firms (Jaggi et al., 2009). Therefore, board decisions on appointing diverse audit committee members may be controlled by family members on the board or substantial shareholders in Hong Kong. Hong Kong Stock Exchange (HKEX) has required issuers to adopt a policy for achieving board diversities with measurable objectives to assess its implementation in 2013. In 2019, the provision has been upgraded to a listing rule 2019 (Ashworth & Parkin, 2022). It is a mandatory requirement to have in place a diversity policy (Ashworth & Parkin, 2022). From the discussion above, this research seeks to examine the following research question:

Using a sample of Hong Kong listed firms contained in the Hong Kong Composite Index (Hang Seng Index) from 2010 to 2015, we run fixed panel data and dynamic panel data regressions of board characteristics on audit committee diversities measured as diverse education levels, gender, experience, ethnicity, and age. The results provide considerable evidence on the relationships between board characteristics and audit committee diversities. Board independence, board directorship, board size, and board tenure are positively associated with audit committee diversities in education levels whilst they are negatively associated with diverse experience except for the insignificant results of board tenure. Board independence is negatively related to audit committee ethnic diversities while board tenure is positively associated. Concerning audit committee diverse gender and age, we find that board age is negativelv associated with audit committee members' gender diversity. Board independence is positively associated with audit committee members' age diversity whilst the board gender diversity is negatively associated.

This paper contributes to the existing literature by investigating the role of the board in the audit committee diversities. First, to our best knowledge, this is the first paper to study the associations between board characteristics and audit committee diversities. It is important because we can understand how board characteristics affect the appointment of diverse audit committee members to monitor financial reporting quality. Second, our unique findings show that whilst effective board characteristics encourage diverse audit committee education levels but reduce the diverse experience. Board members may perceive levels improve that diverse education their communication or stimulate audit committee members to propose different ideas, constraining the effects of group thinking. However, diverse experiences may break group coherence and communication effectiveness, thus reducing their oversight quality. Third, our results on control that board variables show state ownership encourages education, experience, and gender diversities while discouraging ethnic diversity. Further, board directors with political connections reduce diverse education and experience. The results show that family members on the board reduce

diverse education levels whilst our findings show that effective board characteristics encourage them. These imply that family members and directors with political connections may seek personal interests by reducing audit committee diversities. This study calls for future research into the effects of audit committee diversities in education levels, ethnicities, and experience on its oversight effectiveness on financial reporting.

The results of this paper have implications for investors in understanding the role of the board in promoting audit committee diversities to improve their oversight quality in the unique context of the Hong Kong market with a high concentration of family firms with large cultural differences. Moreover, the findings of this research have implications for policymakers in regulating board promote audit characteristics to committee diversities. For example, if certain levels of board independence, number of directorships, size, and tenure are legally mandated, the cost will be the reduction in diverse experience. These results echo for the Hong Kong Stock Exchange's mandatory requirements to have in place a diversity policy.

The rest of the paper is as follows: Section 2 provides a review of literature and hypothesis development; Section 3 explains the research method; Section 4 reports the empirical results and their discussion and finally, Section 5 concludes the study.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Theoretical framework

The evidence in social psychology studies concludes that diversity results in a better decision-making process because group-thinking effects can be reduced (Kogan & Wallach, 1966). Diverse groups should have a broad range of knowledge, skills, and abilities, so members of a group have different opinions and perspectives. The challenges to reconcile conflicting viewpoints may encourage group members to consider thoroughly the relevant information and prevent the members from agreeing to the course of actions too easily. Exposure to diverging and potentially surprising perspectives may lead to more creative and innovative ideas and solutions (De Dreu & West, 2001). In line with this view, some studies observe an association of diversity with increased task conflict and higher performance (Cox, Lobel, & McLeod, 1991).

Numerous studies have shown that board diversities improve firm performance and corporate governance quality. For instance, Rose et al. (2013) show that board diversities in citizenship improve firm performance. At the audit committee level, prior studies observe that audit committee gender and age diversities improve audit committee oversight effectiveness as measured as the reduction in earnings management or several financial restatements (Komal et al., 2020). Oradi and Izadi (2020) find that the presence of at least one female member on audit committees reduces the likelihood of the incidence of financial statements. Felix, Pevzner, and Zhao (2021) find that audit committees' cultural diversity reduces the likelihood of financial accounting restatements. They also document that cultural diversity is associated with



a lower likelihood of restatements for firms with more powerful CEOs, indicating that more culturally diverse audit committees are more effective in constraining CEO accounting opportunism.

Our focus is on the diversities of education level, ethnicity, experience, gender, and age. Education reflects an individual's cognitive ability and skills (Wiersema & Bantel, 1992). Executives with a higher level of education can make better quality decisions because of their better cognitive abilities to process and analyze information (Wally & Baum, 1994). Regarding gender diversity, exposed to different ethical developments, women tend to hold different values, leading to various outlooks and behavior. For instance, men may pay more attention to money, progress, and power, but women may pay more attention to social interactions, complete their assigned tasks more effectively, and be more likely to comply with the regulations (Geiger & Connell, 1999). This may result in better information (Carter, Souza, Simkins, & Simpson, 2010). Concerning experience diversity, diverse experience is more beneficial for the boards' monitoring from beneficial for the the decision-making perspective. First, the board of directors with diverse expertise or skills could effectively perform their duties in the environmental change according to the resource dependence theory (Hillman, Cannella, & Harris, 2002). In other words, various experiences improve a board's decisionmaking and monitoring (Hillman et al., 2002). In line with this viewpoint, Dearborn and Simon (1958) agree that various experience enables managers to perceive and interpret information better. Cultural factors have a significant effect on people's behavior (Haniffa & Cooke, 2002). Moreover, these factors may determine the behavior and ethics of directors (Ow-Yong & Guan, 2002). Amran, Lee, and Devi (2014) show that there is a positive relationship between the board chairman's ethnicity and firm performance.

2.2. Hypotheses development

If there are high proportions of independent non-executive directors on the board, the board may be able to resist managers' influence in their oversight role, so they can make an independent decision to appoint diverse audit committee members, resulting in better corporate governance quality. Bruynseels and Cardinaels (2014) who uses social ties between the CEO and the audit committee as the measures of independence note that social ties reduce audit committee independence so the firms engage more in earnings management and spend less money purchasing audit fees. Ghafoor, Zainudin, and Mahdzan (2019) in their study of key factors that elicit financial reporting fraud among companies in Malaysia note that more independent directors on the board constrain financial reporting fraud. Chen, Knechel, Marisetty, Truong, and Veeraraghavan (2017) in their study of the impacts of board leadership style and independence on the disclosure of internal control weaknesses conclude that the likelihood that a company discloses internal weakness is reduced if a company has more independent directors on the board. We expect that an independent board may resist the influence of managers and enhance corporate governance quality by appointing diverse audit committee members. Thus, we have formulated the following hypotheses:

H1a: Board independence is positively related to the diverse education levels of the audit committee members.

H1b: Board independence is positively related to the diverse ethnicity of the audit committee members.

H1c: Board independence is positively related to the diverse experience of the audit committee members.

H1d: Board independence is positively related to the diverse gender of the audit committee members.

H1e: Board independence is positively related to the diverse ages of audit committee members.

A large board may have more manpower to oversee financial reporting and audit committee effectiveness so that the quality of oversight on financial reporting is enhanced (Shepardson, 2019; Zalata, Tauringana, & Tingbani, 2018). Ghosh, Marra and Moon (2010) in their study of examining the impact of board and audit committees on earnings management in the pre- and post-SOX period find that there is a negative relationship between board size and earnings management. Bradbury, Mak, and Tan (2006)in their study of examining the relationship between board and audit committee characteristics and abnormal accruals in Singapore and Malaysia find that a large board has lower abnormal working capital accruals. Yasser and Al Mamun (2016) in their study of the relationship between board leadership and earnings management in Asia-Pacific countries find that firms with larger boards have lower abnormal accruals. We expect that large boards improve the oversight quality of audit committees by appointing diverse audit committee members and have formulated the following hypotheses:

H2a: Board size is positively related to the diverse education levels of the audit committee members.

H2b: Board size is positively related to the diverse ethnicity of the audit committee members.

H2c: Board size is positively related to the diverse experience of the audit committee members.

H2d: Board size is positively related to the diverse gender of the audit committee members.

H2e: Board size is positively related to the diverse ages of audit committee members.

Prior studies show that board directorships may be positively or negatively associated with oversight quality. It may be positive because directors can gain more experience and expertise by serving on other boards (Zalata et al., 2018). However, it may be negative because they may become too busy performing their oversight role (Brown, Dai, & Zur, 2019). Tham, Sultana, Singh, and Taplin (2019) in their study of examining the impacts of multiple directorships on earnings management for Australian publicly listed firms find that the number of directorships is associated with lower levels of earnings management. Consistent with Tham et al. (2019), Chee and Tham (2020) in their study of examining the relationships between multiple board directorships and earnings quality in Singapore find that the number of board directorships is associated with lower levels of earnings management. However, Baatour, Othman, and Hussainey (2017) in their study investigating the effect of multiple directorships on real and accrualbased earnings management note that multiple directorships have positive effects on real earnings management in the Kingdom of Saudi Arabia.

Kapoor and Goel (2017) in their study of examining the association between earnings management, board characteristics, and a firm's profitability in India show that multiple directorships are positively associated with the levels of earnings management. We expect that board directorships have significant effects on the appointment of diverse audit committee members. Since prior studies show that the effects are non-directional, we have formulated the following hypotheses:

H3a: Board directorships are significantly related to the diverse education levels of the audit committee members.

H3b: Board directorships are significantly related to the diverse ethnicity of the audit committee members.

H3c: Board directorships are significantly related to the diversity of experience of the audit committee members.

H3d: Board directorships are significantly related to the diverse gender of the audit committee members.

H3e: Board directorships are positively related to the diverse ages of audit committee members.

Long-tenured audit committee members may have a high reputation developed over time, so they are likely to ensure that they perform the job effectively to protect their reputation (Sun & Liu, 2013). However, they may become familiar with managers, so their oversight role on managers may be impaired (Rickling, 2014). Chen, Firth, Gao, and Rui (2006) in their study of examining the effects of ownership structure and board characteristics on financial fraud in China note that the long-tenured chair of the board reduces the likelihood of financial fraud in China. Livant, Smith, Suslava, and Tarlie (2021) in their study of examining the relationship between board tenure and firm performance using 3,800 firm observations over a 20-year period found that long-tenured board has higher future abnormal returns. However, Niu and Berberich (2015) in their study examining the relationship between director tenure, busyness, and corporate governance find that long-tenured directors are more likely to have governance problems. We expect that board tenure has significant effects on appointing diverse audit committee members. Since prior studies show that the effects are non-directional, we have formulated the following hypotheses:

H4a: Board tenure is significantly related to the diverse education levels of the audit committee members.

H4b: Board tenure is significantly related to the diverse ethnicity of the audit committee members.

H4c: Board tenure is significantly related to the diverse experience of the audit committee members.

H4d: Board tenure is significantly related to the diverse gender of the audit committee members.

H4e: Board tenure is positively related to the diverse ages of audit committee members.

3. RESEARCH METHOD

3.1. Sample

The sample firms are from Hong Kong's Hang Seng Composite Index because it covered 95 percent of the market capitalization of the listed companies (Hang Seng Indexes Company, 2022). The period of this study is from 2010 to 2015. The study covered this period to highlight the impact that board diversity had received significant attention since 2008 and after the financial crisis. Moreover, Hong Kong Stock Exchange has required issuers to adopt a policy for achieving board diversity with measurable objectives to assess its implementation in 2013. We examine the directors' profiles and the corporate governance reports to identify audit committee and board characteristics and collected financial data for control variables from Datastream and the annual reports of the companies in the sample. We exclude companies that do not have complete financial data, complete information on directors, or whose annual reports are unavailable. Following the elimination, this study contains 1,700 firm-year observations for 343 firms.

3.2. Study variables and measurements

The dependent variable in this study is audit committee diversities measured in five dimensions. An education level diversity is measured as the number of distinct college degrees (bachelor's, master's, and doctorial degrees) divided by three. An experience diversity is measured as the number of distinct expertise divided by the number of audit committee members. Gender diversity is measured as the proportion of female directors on the audit committee. Ethnic diversity is measured as the number of distinct cultures divided by the number of audit committee members. Age diversity is measured as the standard deviation of audit committee members' ages. Dependent variables are summarized in Table 1.

Table 1.	Dependent	variables
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Dependent variables	Code	Measurement
Education level diversity	EDULEDIV	Education level diversity is measured as the number of distinct college degrees divided by three
Experience diversity	EXPDIV	Experience diversity is measured as the number of distinct experiences divided by the number of audit committee members
Gender diversity	FEDIV	Gender diversity is measured as the proportion of female directors on the audit committee
Ethnicity diversity	ETHDDIV	Ethnicity diversity is measured as the number of distinct ethnicities divided by the number of the audit committee members
Age diversity	AGESD	Age diversity is measured as the standard deviation of the ages of audit committee members

The independent variables in this study are board size, board independence, board directorships, and board tenure. Measurement of independent variables is adopted from prior studies. Table 2 summarizes the measures of independent variables.

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Table 2. Independent variables

Independent variables	Code	Measurement
Board size	BSIZE	Board size is measured as the natural log of the number of directors on the board (Shepardson, 2019).
Board directorships	BDIR	Board directorships are measured as the natural log of the average number of directors' outside directorships (Zalata et al., 2018; Aldamen, Duncan, Kelly, McNamara, & Nagel, 2012).
Board tenure	BTENURE	Board tenure is measured as the natural log of the average tenure of board members (Chen et al., 2006; Livant et al., 2021).
Board independence	BIND	Board independence is measured as the proportion of independent non-executive directors on the board (Zalata et al., 2018; Bruynseels & Cardinaels, 2014).

Eleven control variables are incorporated as these have potential effects on the outcome of this study. This includes other board characteristics such as chairman-CEO duality, commitment, age, gender diversity, political connection, family ownership, and family members on the board.

Concerning duality, if the same person serves as CEO and chairman, the quality of governance corporate may be impaired because the CEO has too much power and personally monitor the falsified financial statements, causing loss to shareholders (Abernathy, Hermann, Kang, & Krishnan, 2012). We expect that the dual roles of chairman and CEO reduce audit committee diversities. A board that demonstrates a strong commitment to fulfilling its oversight responsibilities may intensify efforts in its oversight role in the financial reporting and audit processes (Xie, Davison, & DaDalt, 2003). We expect that board commitment increases audit committee diversities. Senior directors should have more experience and expertise that help them monitor corporate governance and audit committee effectiveness. We expect that board members' age increases audit committee diversities. Francis, Hasan, Park, and Wu (2015) point out that female chief financial officers (CFOs) are more sensitive to various types of risk than male CFOs. We expect that proportion of female directors on the board is positively associated with audit committee diversities. Directors with political connections will increase agency costs between the firm and shareholders because they are interested in pursuing social goals or personal interests which may conflict with the direction required for company benefits (Fan, Wong, & Zhang, 2007). We expect that directors with political connections will reduce audit committee diversities. Family members may extract private benefits at the cost of minority shareholders (Jaggi et al., 2009) by reducing audit committee oversight quality on financial reporting. We expect that family ownership and family board members reduce audit committee diversities.

We also control for the effects of state ownership and risk-taking. State ownership is found to have a negative impact on the monitoring role, leading to higher executive pay, agency problems, and poor operating efficiency due to the lack of economic incentives to maximize the value of companies (Yuan, Xiao, Milonas, & Zou, 2009). We expect that state ownership is negatively associated with audit committee diversities. We use three variables to measure the levels of risk-taking. A risktaking firm should have higher profitability, leverage, and size as managers take more risk for the growth of a company. Mongid and Muazaroh (2017) show that risk-taking banks have higher profitability. Bhagat, Bolton, and Lu (2015) explain that there is a positive link between firm size risk-taking among financial institutions. and Acosta-Smith (2020) agrees that there is a positive relationship between leverage and the risk-taking of banks. Risk-taking should reduce audit committee diversities as diversities may have slower decisionmaking processes and be less likely to reach a consensus. We expect that firm size, profitability, and leverage are negatively associated with audit committee diversities. Table 3 provides a summary of the control variables measurement and the related literature support.

Independent variables	Code	Measurement
Duality of the roles of CEO and chairman	DUALITY	Duality of the roles of CEO and chairman is measured as a dichotomous variable which takes on the value of 1 if the CEO and chairman of a company are the same people, otherwise 0 (Abernathy et al., 2012).
Board age	BAGE	Board age is measured as the average age of directors on the board (Mustafa, Che-Ahmad, & Chandren, 2018; Dao, Huang, & Zhu, 2013).
Board commitment	BMEET	Board commitment is measured as the natural log of the number of board meetings in a year (Zaman, Hudaib, & Haniffa, 2011).
Board gender diversity	PERBFEM	Board gender diversity is measured as the proportion of female directors on the board (Marzuki, Haji-Abdullah, Othman, Wahab, & Harymawan, 2019).
Firm size	SIZE	Firm size was measured as the natural log of revenues (Wilson, 2017; Hamdan, Mushtaha, & Al-Sartawi, 2013).
Leverage	LEV	Leverage was measured as debt ratio (Nelson & Devi, 2013; Ghosh et al., 2010).
Profitability	NI	Profitability was measured as net income normalized by total assets at the beginning of this year (Yasser & Al Mamun, 2016; De Vlaminck & Sarens, 2015).
Board political connection	POLITICAL	Board political connection is measured by whether at least one director is a government-related officer (Osamwonyi & Tafamel, 2013).
State ownership	STATEOWN	State ownership is measured as the proportion of shareholding held by the government (Le & Chizema, 2011).
Family ownership	FOWN	Family ownership is measured as the proportion of shareholding held by the family members of the board (Villalonga & Amit, 2006).
Family board members	BFAMILY	Family board members are measured as the number of family members on the board (Wu, 2013).

Table 3. Control variables

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3.3. Model specification

Following prior studies (Badolato, Donelson, & Ege, 2014), we use fixed effects panel data regression. Fixed effect panel data regression seeks to eliminate

the unobserved individual-specific effects on the regression (Marashdeh, 2014). Fixed panel data regression models used to test the hypotheses are presented as follows:

$$EDULEDIV_{it} = \beta_0 + \beta_1 DUALITY_{it} + \beta_2 BSIZE_{it} + \beta_3 BDIR_{it} + \beta_4 BTENURE_{it} + \beta_5 BAGE_{it} + \beta_6 BMEET_{it} + \beta_7 BIND_{it} + \beta_8 PERBFEM_{i,t} + \beta_9 SIZE_{it} + \beta_{10} LEV_{it} + \beta_{11} NI_{it} + \beta_{12} POLITICAL_{it} + \beta_{13} STATEOWN_{it} + (1) + \beta_{14} FOWN_{it} + \beta_{15} BFAMILY_{it} + e_{it}$$

 $ETHDDIV_{it} = \beta_0 + \beta_1 DUALITY_{it} + \beta_2 BSIZE_{it} + \beta_3 BDIR_{it} + \beta_4 BTENURE_{it} + \beta_5 BAGE_{it} + \beta_6 BMEET_{it} + \beta_7 BIND_{it} + \beta_8 PERBFEM_{i,t} + \beta_9 SIZE_{it} + \beta_{10} LEV_{it} + \beta_{11} NI_{it} + \beta_{12} POLITICAL_{it} + \beta_{13} STATEOWN_{it} + \beta_{14} FOWN_{it} + \beta_{15} BFAMILY_{it} + e_{it}$ (2)

$$\begin{split} EXPDIV_{it} &= \beta_0 + \beta_1 DUALITY_{it} + \beta_2 BSIZE_{it} + \beta_3 BDIR_{it} + \beta_4 BTENURE_{it} + \beta_5 BAGE_{it} + \beta_6 BMEET_{it} + \\ \beta_7 BIND_{it} + \beta_8 PERBFEM_{i,t} + \beta_9 SIZE_{it} + \beta_{10} LEV_{it} + \beta_{11} NI_{it} + \beta_{12} POLITICAL_{it} + \beta_{13} STATEOWN_{it} + \\ \beta_{14} FOWN_{it} + \beta_{15} BFAMILY_{it} + e_{it} \end{split}$$
(3)

 $FEDIV_{it} = \beta_0 + \beta_1 DUALITY_{it} + \beta_2 BSIZE_{it} + \beta_3 BDIR_{it} + \beta_4 BTENURE_{it} + \beta_5 BAGE_{it} + \beta_6 BMEET_{it} + \beta_7 BIND_{it} + \beta_8 SIZE_{it} + \beta_9 LEV_{it} + \beta_{10} NI_{it} + \beta_{11} POLITICAL_{it} + \beta_{12} STATEOWN_{it} + \beta_{13} FOWN_{it} + \beta_{14} BFAMILY_{it} + e_{it}$ (4)

 $AGESD_{it} = \beta_0 + \beta_1 DUALITY_{it} + \beta_2 BSIZE_{it} + \beta_3 BDIR_{it} + \beta_4 BTENURE_{it} + \beta_5 BAGE_{it} + \beta_6 BMEET_{it} + \beta_7 BIND_{it} + \beta_8 PERBFEM_{i,t} + \beta_9 SIZE_{it} + \beta_{10} LEV_{it} + \beta_{11} NI_{it} + \beta_{12} POLITICAL_{it} + \beta_{13} STATEOWN_{it} + \beta_{14} FOWN_{it} + \beta_{15} BFAMILY_{it} + e_{it}$ (5)

4. RESULTS

4.1. Summary statistics and correlations among variables

We present the descriptive statistics in Table 4. The means of the *EDULEDIV*, *ETHDDIV*, *EXPDIV*, *FEDIV*, *AGESD* are 0.62, 0.90, 0.53, 0.08, and 7.73, respectively.

Variable	Mean	SD	Min	Max
EDULEDIV	0.62	0.22	0	1
ETHDDIV	0.90	0.16	0.33	1
EXPDIV	0.53	0.22	0.14	1
FEDIV	0.08	0.16	0	1
AGESD	7.73	4.06	0	20.66
BAGE	54.93	5.04	38.63	71.74
BIND	0.38	0.08	0.125	0.75
BDIR	-0.36	0.94	-2.89	1.86
BTENURE	1.64	0.59	-2.48	3.35
BSIZE	2.26	0.26	1.39	3.09
BMEET	1.81	0.51	0	4.26
PERBFERM	0.096	0.10	0	0.5
STATEOWN	9.53	21.57	0	100
DUALITY	0.28	0.45	0	1
POLITICAL	0.50	0.50	0	1
FOWN	0.06	0.14	0	0.76
BFAMILY	0.83	1.56	0	8
SIZE	16.03	1.79	8.59	21.78
NI	0.061	0.40	-8.50	11.04
LEV	0.82	9.29	0.001	398.53

 Table 4. Descriptive statistics

Note: The definition of variables is summarized in Tables 1, 2, and 3.

In terms of education levels, ethnicities, experience, and age, audit committees in Hong Kong are very diversified, but only 8 percent of the members are female directors on the audit committee. On average board members are 54.93 years old. The mean of board directorships are 0.69 (*log value* = -0.36). Boards in Hong Kong are not too busy. The mean of board tenure is 5.16 (*log value* = 1.64). Boards have a long tenure in Hong Kong. The mean

board size is 9.58 (*log value* = 2.26). Boards in Hong Kong are large. The mean of the proportion of female directors on the board is 0.096. Boards only consist of 9.6 percent of female directors in Hong Kong. The female directors on the board are underpresented. The mean of board meetings is 6.11 (*log value* = 1.81). Boards show a strong commitment in Hong Kong.

Table 5 reports Pearson correlation coefficients among key variables. First, we notice that EDULEDIV is negatively associated with EXPDIV and ETHDDIV, suggesting that diverse education levels may be a substitute for diverse experiences and ethnicities. Boards may perceive that diverse education levels, experiences, and ethnicities have different effects on oversight quality. BMEET is negatively related to EXPDIV. A committed board may not perceive that diverse audit committee experience benefits oversight quality. Consistent with the results of board commitment, a large board may perceive that diverse audit committee experience may affect the audit committee's effectiveness, leading to lower oversight quality. BSIZE is positively associated with EDULEDIV, FEDIV, and AGESD, but negatively related to EXPDIV. BTENURE is negatively related to EXPDIV, indicating that a board with longer tenure may perceive that diverse experience reduces audit committee oversight quality. The results are strengthened by the positive relationships between DUALITY and EXPDIV. The chairperson with the role of CEO may perceive that diverse audit committee experience may enable them to reduce the oversight quality. These results provide primary support for some of our hypotheses while board independence, board age, board commitment, board size, and board tenure are negatively associated with diverse experience. Pearson correlation in Table 5 and variance inflation factor (VIF) in Table 6 were used to test the level of multi-collinearity between the variables. Table 5 and Table 6 show that there is no multicollinearity issue.



 Table 5. Pearson correlations

	EDULEDIV	EXPDIV	ETHDDIV	FEDIV	AGESD	BAGE	BIND	BDIR	BMEET	BSIZE	BTENURE	PERBFEM	STATEOWN	DUALITY	POLITICAL	FOWN	BFAMILY	SIZE	NI
EDULEDIV	1																		
EXPDIV	-0.0726**	1																	
ETHDDIV	-0.179***	0.0257	1																
FEDIV	0.0307	-0.0382	-0.0357	1															
AGESD	0.0277	-0.0130	-0.124***	-0.0196	1														
BAGE	0.00390	-0.087***	0.0377	0.00765	0.00502	1													
BIND	0.0728**	0.0496*	0.0274	-0.000206	-0.096***	0.148***	1												
BDIR	-0.0105	0.0262	-0.0444	-0.0167	-0.131***	0.337***	0.143***	1											
BMEET	0.0308	-0.0713**	0.0315	-0.0440	-0.0145	-0.158***	0.0874***	-0.199***	1										
BSIZE	0.0815***	-0.197***	-0.130***	0.0818***	0.134***	0.173***	-0.480***	-0.00683	-0.0112	1									
BTENURE	-0.0107	-0.134***	0.0301	0.0283	-0.00177	0.495***	0.000999	0.226***	-0.183***	0.138***	1								
PERBFEM	0.0331	0.00286	0.0551*	0.481***	-0.081***	-0.0651**	-0.0287	0.0444	-0.0335	0.0210	0.0689**	1							
STATEOWN	0.00264	-0.0392	0.0406	-0.0403	0.0114	0.0926***	0.0654**	-0.129***	0.198***	0.00419	-0.184***	-0.141***	1						
DUALITY	-0.0160	0.159***	0.135***	-0.0337	0.0165	-0.0614*	0.100***	-0.0312	-0.136***	-0.133***	0.0699**	0.0481*	-0.214***	1					
POLITICAL	-0.0476	-0.146***	0.0779**	-0.0256	0.0385	0.170***	-0.0128	0.150***	-0.0125	0.120***	0.0712**	-0.0326	0.0122	-0.00866	1				
FOWN	-0.0490*	0.0269	0.0950***	0.0491*	-0.0139	0.0183	-0.086***	-0.00495	-0.161***	0.0210	0.139***	0.159***	-0.194***	0.127***	0.0848***	1			
BFAMILY	-0.086***	-0.0587*	0.119***	-0.00364	0.0270	0.116***	-0.175***	0.0544*	-0.214***	0.183***	0.308***	0.133***	-0.240***	0.0842***	0.147***	0.633***	1		
SIZE	0.0104	-0.085***	-0.0424	0.0527*	-0.00873	0.248***	-0.0274	-0.0298	0.0812***	0.313***	0.122***	-0.110***	0.289***	-0.0712**	0.133***	-0.086***	-0.0344	1	
NI	0.0106	0.0303	-0.0203	0.0440	0.00547	0.0255	-0.0617*	-0.0377	-0.0545*	0.0581*	0.0306	0.0226	-0.0129	-0.00423	0.0161	0.0315	0.0418	0.0771**	1
LEV	0.00605	0.0191	-0.0363	0.0396	0.00254	-0.0160	-0.00520	-0.0157	0.0254	0.00880	-0.0732**	0.0411	-0.00968	-0.0161	-0.0265	-0.0140	-0.0178	-0.00123	0.619***

Note: Definitions of variables are summarized in Tables 1, 2, and 3. *, ** and *** represent p-value less than 10 percent, 5 percent, and 1 percent, respectively.

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Table 6. Variance inflation factor (VIF)

Variable	VIF	1/VIF
BAGE	1.72	0.58
BIND	1.44	0.69
BDIR	1.24	0.80
BTENURE	1.56	0.64
BSIZE	1.60	0.63
BMEET	1.17	0.85
PERBFERM	1.06	0.94
STATEOWN	1.32	0.76
DUALITY	1.11	0.90
POLITICAL	1.09	0.92
FOWN	1.74	0.58
BFAMILY	1.95	0.51
SIZE	1.32	0.75
NI	1.67	0.60
LEV	1.66	0.60

4.2. Main results

We conduct regression tests to evaluate the associations between independent boards (BIND) and audit committee diversities in education levels (EDULEDIV), ethnicities (ETHDDIV), experience (EXPDIV), gender (FEDIV), and age (AGESD). The regression results are reported in Table 7 from models (equations (1)-(5)). The results based on EDULEDIV (p < 0.000) and AGESD (p < 0.01) show that the coefficient for BIND is positive and statistically significant, suggesting that firms with a higher proportion of independent directors on the board are associated with higher levels of diversities in education and age. The results on ETHDDIV (0.01) and EXPDIV (p < 0.01), however, show that the BIND coefficient is negative and significant. The results support hypotheses H1a and H1e, but the results stand in contrast with our hypotheses H1b and H1c. In other words, we find that independent boards are encouraged to appoint audit committee members with diverse education levels and ages, but discouraged in diverse ethnicities and experiences.

We also find significant and positive relationships between *BDIR* and *EDULEDIV* (p < 0.05) and *FEDIV* (p < 0.000), while *BDIR* is negatively related to *EXPDIV* (p < 0.05), indicating that boards with more directorships are encouraged to appoint audit committee members with diverse education levels and more female directors whilst they are discouraged for diverse experience. The results support our hypotheses *H2a*, *H2c*, and *H2d*. We also find a significant and positive

We also find a significant and positive relationship between *BSIZE* and *EDULEDIV* (p < 0.01), while *BSIZE* is significantly and negatively related to *EXPDIV* (p < 0.001). The results show that large boards are more likely to appoint audit committees with diverse education levels but less likely to appoint them with diverse experience. The results support our hypothesis *H3a* but stand in contrast with *H3c*. Finally, there are significant positive relationships between *BTENURE*, *EDULEDIV* (p < 0.01), and *ETHDDIV* (p < 0.01). The results support our hypotheses *H4a* and *H4b*.

Regarding the control variables, *STATEOWN* is positively associated with *EDULEDIV* (p < 0.01), *EXPDIV* (p < 0.01), and *FEDIV* (p < 0.05) but negatively associated with *ETHDDIV* (p < 0.05). An alternative explanation is that occupation diversities in boards of state-owned enterprises are important when state-owned enterprises decide on and execute a policy based on public opinion. *POLITICAL* is negatively related to *EDULEDIV* (p < 0.10) and *EXPDIV* (p < 0.05), but positively associated with *AGESD* (p < 0.05). Directors with political connections will increase agency costs between the firm and shareholders because they are interested in pursuing social goals or personal interests which may conflict with the direction required for company benefits (Fan et al., 2007). Liang, Lin, Yu, and Li (2021) note that directors with political connections reduce firm value. Therefore, directors with political connections tend to reduce the audit committee's effectiveness by discouraging its diversities.

BFAMILY is negatively related to EDULEDIV (p < 0.01) but positively and marginally related to *EXPDIV* (p < 0.10). The results stand in contrast with boards with effective characteristics such as board independence and board size. The results may indicate that family members on the board may use their power to appoint diverse audit committee members which limits audit committees' group effectiveness such to diverse experience. The results of this study suggest that BIND, BDIR, and BTENURE reduce EXPDIV, but BFAMILY is positively related to *EXPDIV.* Similar to *EDULEDIV*, *BIND*, *BDIR*, and *BTENURE* are positively associated with *EDULEDIV* whilst BFAMILY is negatively related to EDULEDIV. Family members may extract private benefits at the cost of minority shareholders (DeAngelo & DeAngelo, 2000) by reducing audit committee oversight quality on financial reporting. Supporting the view of DeAngelo and DeAngelo (2000). Jaggi et al. (2009) find that family members on the board reduce the negative relationship between board independence and earnings management.

SIZE is negatively associated with *EDULEDIV* (p < 0.01), *ETHDDIV* (p < 0.01) whilst positively associated with *EXPDIV* (p < 0.01). This is consistent with prior studies that risk-taking should reduce diversities as diversities may have slower decision-making processes and be less likely to reach a consensus, so firm size reduces education and ethnic diversities. However, a large firm may need higher levels of diversities due to the complex nature of the business, so the firm size is positively related to diverse experience.

4.3. Robust test

In studies of corporate governance, endogeneity is important consideration. The endogeneity an problem is present when there is a relationship between an explanatory variable and the error term, resulting in biased estimators (Adkins & Hill, 2008). Endogeneity problems may arise due to omitted variables, measurement errors, and reverse causality (Wooldridge, 2012). There is a general perception that endogeneity caused by reverse causality may be solved using an instrumental variable approach (Roberts & Whited, 2012). Larcker and Rusticus (2010) argue that the instrumental variable regression is helpful in corporate governance research when the independent variables are endogenous. In this study, both audit committee diversities and board characteristics may be jointly determined by unobservable factors in such a way that a spurious relation exists. For example, it is conceivable that an unspecified risk factor that lowers board effectiveness also leads firms to audit committee diversities. reduce Using the dynamic panel regression, we can ease the endogeneity problems. Unlike traditional fixedeffect estimates, it allows the current value of an independent variable to be related to the past value of a dependent variable. Further, if there is an endogeneity issue in the relationship between the dependent and independent variable, it employs a set of internal instruments included within the panel itself (Embong & Hosseini, 2018). In this study, we employ dynamic panel difference GMM regression (Arellano & Bond, 1991). The findings of

dynamic panel data regression are similar to those in the main study using fixed effect panel data regression. The study is robust for endogeneity. The results are summarized in Table 8.

Variable	EDULEDIV	ETHDDIV	EXPDIV	FEDIV	AGESD
BAGE	-0.005**	-0.001	-0.001	-0.002*	0.0171
DAGL	(0.031)	(0.385)	(0.638)	(0.063)	(0.678)
BIND	0.307***	-0.254***	-0.186***	0.032	3.553***
DIND	(0.000)	(0.000)	(0.001)	(0.441)	(0.007)
BDIR	0.022**	0.004	-0.016**	0.017***	-0.3018
bDIK	(0.038)	(0.623)	(0.039)	(0.006)	(0.121)
BMEET	0.012	-0.006	-0.004	-0.007	-0.0762
DMLLI	(0.287)	(0.428)	(0.647)	(0.325)	(0.721)
BSIZE	0.171***	-0.032	-0.109***	-0.008	0.830
DJILL	(0.000)	(0.172)	(0.000)	(0.680)	(0.186)
BTENURE	0.032***	0.030***	-0.014	0.000	0.072
DIENUKL	(0.009)	(0.000)	(0.133)	(0.987)	(0.751)
PERBFEM	0.044	-0.040	0.028		-2.436*
PENDFEM	(0.566)	(0.449)	(0.615)		(0.003)
STATEOWN	0.003***	-0.001**	0.003***	0.001**	-0.0171
STAILOWN	(0.004)	(0.037)	(0.000)	(0.015)	(0.310)
DUALITY	-0.004	0.008	0.015	-0.002	0.110
DUALITI	(0.794)	(0.411)	(0.177)	(0.822)	(0.687)
POLITICAL	-0.027*	0.011	-0.024**	0.009	0.632**
TOLITICAL	(0.057)	(0.265)	(0.024)	(0.273)	(0.014)
FOWN	0.089	-0.067	0.018	-0.038	-0.118
TOWN	(0.282)	(0.241)	(0.765)	(0.429)	(0.937)
BFAMILY	-0.040***	0.007	0.014*	0.007	-0.092
DI ADILLI	(0.000)	(0.355)	(0.092)	(0.293)	(0.643)
SIZE	-0.018***	-0.016***	0.020***	0.003	-0.181
SIZE	(0.003)	(0.000)	(0.000)	(0.334)	(0.107)
NI	-0.001	0.005	0.005	-0.001	0.001
111	(0.918)	(0.530)	(0.505)	(0.895)	(0.959)
LEV	0.000	-0.000	0.000	0.000	0.003
	(0.900)	(0.344)	(0.737)	(0.182)	(0.678)
Constant	0.618***	1.375***	0.541***	0.165*	6.386**
Constant	(0.000)	(0.000)	(0.000)	(0.083)	(0.035)
Ν	1700	1700	1700	1700	1700

Note: *, ** and *** represent p-value less than 10 percent, 5 percent, and 1 percent, respectively.

Table 8. Results of dynamic panel regression

Variable	EDULEDIV	ETHDDIV	EXPDIV	FEDIV	AGESD
	-0.004	-0.004*	0.002	-0.006***	0.056
BAGE	(0.244)	(0.085)	(0.455)	(0.001)	(0.442)
	0.316***	0.030	-0.230***	-0.063	-0.742
BIND	(0.002)	(0.714)	(0.000)	(0.255)	(0.735)
	0.038**	0.015	-0.010	0.011	0.410
BDIR	(0.011)	(0.159)	(0.288)	(0.168)	(0.189)
	0.010	0.002	-0.001	-0.007	-0.198
BMEET	(0.532	(0.875)	(0.911)	(0.363)	(0.544)
	0.214***	0.015	-0.095***	0.010	0.698
BSIZE	(0.000)	(0.697)	(0.003)	(0.712)	(0.512)
	-0.003	0.059***	-0.019*	0.014	0.161
BTENURE	(0.864)	(0.000)	(0.081)	(0.133)	(0.660)
	0.064	-0.240***	0.055		-1.395
PERBFEM	(0.568)	(0.007)	(0.043)		(0.555)
	0.003*	-0.004***	0.004***	0.002*	0.048
STATEOWN	(0.095)	(0.002)	(0.002)	(0.069)	(0.213)
	-0.013	0.010	-0.005	0.010	0.243
DUALITY	(0.521)	(0.532)	(0.727)	(0.353)	(0.589)
	0.037*	-0.017	-0.039***	0.016	-0.099
POLITICAL	(0.070)	(0.282)	(0.003)	(0.128)	(0.815)
	-0.118	-0.086	-0.026	-0.030	-0.503
FOWN	(0.359)	(0.362)	(0.746)	(0.656)	(0.852)
	-0.008	0.006	0.010	0.014*	-0.198
BFAMILY	(0.601)	(0.621)	(0.321)	(0.091)	(0.542)
	-0.024***	-0.011	-0.002	-0.008*	0.093
SIZE	(0.005)	(0.100)	(0.598)	(0.092)	(0.654)
	-0.010	-0.002	-0.005	-0.005	-0.086
NI	(0.549)	(0.864)	(0.598)	(0.546)	(0.801)
	0.000	0.000	0.000	-0.000	-0.002
LEV	(0.585)	(0.264)	(0.592)	(0.881)	(0.892)
	0.313	0.523*	0.731***	0.455***	-5.772
Constant	(0.345)	(0.084)	(0.000)	(0.001)	(0.352)

Note: *, ** and *** represents p-value less than 10 percent, 5 percent, and 1 percent, respectively.

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5. DISCUSSION

The results indicate that effective board characteristics are more likely to increase audit committee diversities in education levels, gender, and age. Thus the results are consistent with prior studies that a large board may have more manpower to oversee audit committee effectiveness by monitoring the appointment of diverse audit committees so that the quality of oversight on financial reporting is enhanced (Shepardson, 2019; Zalata et al., 2018). Independent boards may be able to resist managers' influence in their oversight role, so they can make an independent decision to appoint diverse audit committee members, resulting in better corporate governance quality (Ghafoor et al., 2019; Chen et al., 2017; Bruynseels & Cardinaels, 2014). Board directorships are associated with oversight quality as more experience and expertise can be gained by serving on other boards (Tham et al., 2019; Zalata et al., 2018). Boards with more directorships understand the importance of the appointment of a diverse audit committee. Long-tenured board members may have a high reputation developed over time, so they are likely to ensure that they perform the job effectively to protect their reputation (Sun & Liu, 2013). Thereby, boards will appoint diverse audit committees so that the audit committee will be more effective to protect their reputation.

However, effective board characteristics constrain the diversities of the audit committee in ethnicities and experience. The explanation for the negative associations between diverse experiences and ethnicities is that the diversities may have negative consequences for cohesion and performance. Extant theory indicates that ethnic diversity is most likely to have consequences in a group composed of two subgroups of equal size (Carton & Cummings, 2013). The subgroup may use demographic characteristics to categorize one another and prefer similar others to dissimilar others to maintain a positive sense of self (Turner, Hoggs, Oakes, Reicher, & Wetherell, 1987). In a group composed of subgroups, preferences for similar others lead members to identify with their subgroup, rather than a group as a whole, which prevents work group cohesion. A low cohesion group results in low levels of trust and satisfaction, in turn negatively affecting performance. Consistent with the theory, Pitts and Jarry (2005) in their study of examining ethnic diversity in the organizations finds that ethnic diversity results in processoriented complications in the workplace and negatively affects performance. Dahlin, Weingart, and Hinds (2005) agree that conflicts, clashes, and collisions emerged due to ethnic diversity and social categorization. Ahmad and Rahman (2019) observe that an ethnicity diversity has a negative relationship with the performance of the employees.

The negative relationships between effective board characteristics and experience indicate that similar occupations between members have positive influences on relationships by reducing out-group bias (Park & Young, 2020) and raising equality between the majority and minority (Mischel & Moore, 1973). Also, they believe that diverse experiences may have negative impacts on the oversight quality of the audit committee. Thereby, they discourage the appointment of audit committees with diverse experience. For instance, Alhababsah and Yekini (2021) observe that legal experience is not related to audit quality. They explain that the lack of accounting background of the legal experts might be other potential reasons for the insignificant effect on audit quality. Li and Wahid (2018) find that board expertise diversity is not significantly related to restatements of financial statements.

6. CONCLUSION

This study examines the relationship between board characteristics and audit commit diversities in Hong Kong. We document that board characteristics are significant determinants of audit committee diversities from 2010 to 2015. Good corporate governance reflected by effective board characteristics mitigate agency problems bv appointing audit committee members with suitable levels of diversities in education, gender, and age while the results imply that board members may perceive that diverse experience destroys group effectiveness of audit committees. The results further show that family members on the board and directors with political connections reduce audit committee diversities so that they could easily manipulate financial reporting. This study has a limitation. Because our data collection is limited to secondary sources of data, although we rely on behavioural theory to infer what decision-making processes are like when appointing audit committee members, we do not collect any primary sources of data that may show how boards process make their decisions in appointing diverse audit committee members. Particularly, the results show that most of the board characteristics encourage the boards to appoint audit committee members with diverse education levels but discourage the boards to appoint them with diverse ethnicities and experience. This study enriches our understanding of how board characteristics, family firms, political connections, and risk-taking firms are related to the appointment of diverse audit committee members. results suggest that further The research investigating the effects of audit committee diversities in education levels, age, gender, ethnicities, and experience on financial reporting quality should be fruitful.

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