



University of Wales
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**The Effect of Board Characteristics on Firm Financial
Performance of Listed Companies in Hong Kong**

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Abstract

Corporate board characteristics are mainly due to the nature of directors because boards are composed of members with different backgrounds, such as family background, gender, and classification of directors which may affect directors' roles and responsibilities within a board. Since executive directors are responsible for smooth daily operation and maximization of shareholders' wealth, board characteristics may affect firm's financial performances. Hence, the Stock Exchange of Hong Kong ("HKEX") proposed requirements on appointments of female directors and independent non-executive directors to boards. There is also new regulation to require the listed companies to disclose board members' attendance at general meeting in the poll results announcements. Accordingly, this study aims to investigate the extent to which board characteristics may influence firm's financial performances.

This study evaluated three financial indicators, i.e., ROA, Tobin's Q, and Z-score by using six independent variables of board characteristics, the board size as moderating variable and firm size and company type as controlling variables, based on the financial data of 120 sample companies from 2015 to 2019. All data are extracted from the website of the HKEX or the websites of the targeted companies. This study performed correlated coefficient analysis, hierarchical regression analysis, and independent samples t-test by running SPSS on 600 sample cases. It interpreted the results by applying three theories of corporate governance, i.e., agency theory, stewardship theory, and resource dependence theory. The agency theory explains the relationship between the board and the shareholders as well as other stakeholders. The stewardship theory explains the relationship between the board and the management of the company. The resource dependence theory explains the responsibility of the board members to bring their distinct resources to the company.

For the results, family involvement was found to be positively related to ROA. There was the difference between CEO duality or CEO without duality of the listed companies towards Tobin's Q. The education level of the board was found to be positively related to Tobin's Q. The percentage of independent non-executive directors was found to be positively related to Z-Score. For the moderating variable, the board size, was found to affect the relationship between dependent variables and independent variables in different degrees. For ROA, the board size exerted the negative influence on the relationship between CEO duality and ROA. The board size exerted the positive influence on the relationship between the number of independent non-executive directors and ROA. For Tobin's Q, the board size exerted the negative influence on the relationship between the number of family directors and Tobin's Q.

The board size exerted the positive influence on the relationship between the number of board members with master's degree or above and Tobin's Q. For Z-Score, the board size did not exert any influence on the relationship between any board characteristics and Z-Score.

This study revealed three key findings: (1) different board structures may influence different firm indicators, (2) division of responsibilities of board members is important, and (3) a good structure of board members can strengthen the confidence of existing shareholders and attract potential investors.

This study contributes to the knowledge of board characteristics by illustrating how applied theories can explain the relationships between board characteristics and financial performances. It also makes a practical contribution to the selection of different types of board members. In addition, it provides suggestions about how to improve financial indicators of listed companies in Hong Kong as well as directions for future studies.

DECLARATION

This work has not previously been accepted in substance for any degree, and it is not being concurrently submitted in candidature for any degree.

Signed (candidate)

Date ...31st July 2021.....

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used the extent and nature of the correction is clearly marked in a footnote(s). Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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STATEMENT 2

I hereby give consent for my thesis, if accepted, to be available for deposit in the University's digital repository.

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Acknowledgment

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List of Abbreviations

CEO	Chief Executive Officer
ESG	Environmental, Social and Governance Report
GEM	Growth Enterprise Market Board of the Stock Exchange of Hong Kong
HKCGI	Hong Kong Corporate Governance Institute
HKEX	The Stock Exchange of Hong Kong
HKICPA	Hong Kong Institute of Certified Public Accountants
HKIOD	Hong Kong Institute of Directors
INEDs	Independent Non-executive Directors
IPO	Initial Public Offer
MBA	Master of Business Administration
OECD	Organization for Economic Co-operation and Development
ROA	Return on Assets
SFC	Securities and Future Commissions of Hong Kong
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
US	United States of America

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Chapter 1. Introduction

1.1 Overview

Nowadays, corporate governance is one of the hot topics in the business world. In Hong Kong, the HKEX, the HKICPA and the HKCGI are concerned about the importance of corporate governance. Hong Kong is an international financial center in the world, and good corporate governance is very important. A good corporate governance system can protect the interests of the investors to ensure their returns from the stock market. It can give a good impression for the investors and maintain the sustainable competitiveness of the Hong Kong stock market. According to the HKEX, the IPO market of Hong Kong ranked number one in the world in 2020, and an amount of capital of HK\$398 billion was raised in the stock market of Hong Kong. Without a good corporate governance system, no company will succeed in IPO in Hong Kong, and no foreign investors will invest in the Hong Kong financial market.

For the definition of corporate governance, Claessens (2006) stated that good corporate governance is associated with low cost of capital, efficient use of capital to obtain high returns on capital and the most favorable treatment of different stakeholders. According to his study, stakeholders are not limited to shareholders. They include management, vendors, customers, employees, government, and the public. Among the classifications of stakeholders, some of them have a direct relationship with the board of directors, i.e., shareholders, vendors, customers, and employees, and to whom the board of directors owes a duty. With the government and public, a company may not have a direct relationship, and the rights of the government and the public may even have been ignored. However, the board of directors still owes a duty to them. If the board cannot handle the needs of stakeholders properly, it will cause disasters to the company. To satisfy the

stakeholders' needs, the financial performance and non-financial performance of a company are important; however, it depends on corporate strategies. A company may be shareholder-oriented and/or stakeholder-oriented, and the board composition is quite critical. The board may consist of various types of directors, such as executive directors and independent non-executive directors, and they play different roles and functions inside the boardroom. Otherwise, there is no need to appoint different types of directors to serve the board.

Under the Principles of Corporate Governance of G20/OECD, the corporate governance framework needs to consider the rights of the stakeholders under the regulatory requirements or through mutual agreements. Firm financial performance is one of the good indicators to evaluate the corporate governance of a company. This study expected to identify what are the board characteristics that would cause influence on firm's financial performance; therefore, a firm can adjust such board characteristics to improve its financial performances.

Furthermore, boards can be divided into family-owned and non-family owned. According to Mustafa et al. (2016), the organizational context can be divided into firm level and family level contexts. For firm level context, it involves the ownership characteristics and governance. For family level context, it involves the composition of the board. For a family-owned business, shareholders have two concerns: the domination of family members over board decision-making processes and the succession plans of the family members, because these two issues may affect firm's operational and financial performances. In the case that family members dominate the board; shareholders may worry about that family members may refuse to reinvest profits into the company. In the worst case, shareholders may worry about that family

members remain active on the board even though they may not be competent or qualified to continue running the business. Besides, parents of family members of a firm often make sure that they retain the decision-making power over the next generation. There may be a lack of communication between these two generations in management. However, Man et al. (2016) found that one of the critical success factors of the family business is a good succession plan. According to their study, a company should announce its succession plan as early as possible, because it has an impact on firm value. Since corporate transparency and disclosure are very important and can affect the confidence of shareholders; early announcement of a succession plan can strengthen the confidence of shareholders and potential investors. There are two types of transparency. One is the financial transparency, and the other is governance transparency. For financial transparency, a company needs to provide timely stakeholders with financial information. For governance transparency, a company needs to provide stakeholders with further information, e.g., the succession plan of family members, because it can affect the share price of the company. This study provides information about how board characteristics can improve different firm financial indicators with focus on the listed companies in Hong Kong.

1.2 Problem statement

Different stakeholders may have different expectations from the company, and they expect that the board can improve different aspects of the company. This study tried to satisfy the needs of different stakeholders. In the past, most researchers focused on only one firm financial indicator, while the stakeholders mainly focused on two major areas. For example, some stakeholders expect to know how the board characteristics can maximize profitability of the company; while others expect to know how the board characteristics can maintain liquidity of the company. These differences of

expectation depend on the attitude of the stakeholders towards a company. This study expects to provide a full picture of different board characteristics that will influence different firm financial indicators, and it can help improve the board effectiveness through the board composition. A company is a corporate citizen, and it needs to care about the needs of different stakeholders.

In Hong Kong, the HKEX expects to enhance the gender diversity in boardrooms and proposes to require listed companies to appoint at least one female director under the "comply or explain" approach. Listed companies need to appoint at least one female director in the future; otherwise, they need to justify for non-compliance with the approach. The HKEX proposes to create new Mandatory Disclosure Requirements to make it clear that a single gender board is not considered a diverse board under Listing Rule 13.92. According to Ko (2020), the number of female directors is very low as compared with that of other countries. Ms. Ko was former chair of the HKEX's Listing Committee and was China chairwoman of Freshfields Bruckhaus Deringer. Among the 50 Hang Seng index constituent companies up to March 2020, women occupy just only 13.6 percent of board positions, and eleven Hang Seng Index companies have all-male boards. In other countries, women make up 33.5 percent of Financial Times Stock Exchange (FTSE 100) boards and 28.6 percent of Standard & Pool (S&P100) boards in the US. In Malaysia, women occupy 25.3 percent of board positions and women occupy 18.4 percent of board positions in Singapore. In India, it is mandatory to have at least one woman on the board, and nearly 16 percent of directors there are women. Situation of Hong Kong is lagging behind the developed and developing countries in this aspect. Ms. Ko supported the imposition of a 40 percent quota of female directors within six years. In the past, very few studies focused on the influence of female directors on firm financial performance in Hong

Kong. Obviously, it is high time to perform such a study. The HKEX Guidance for Boards and Directors, issued in July 2018, emphasizes the importance of gender diversity in boardrooms, and it makes it clear that the importance of a listed company's diversity policy must be disclosed in annual Corporate Governance Reports, so that stakeholders can know the gender diversity policy of listed companies. However, the previous consultations on such issues of the board gender diversity by the HKEX indicated that the imposition of mandatory quotas would not be supported by the market. One important reason was that previous consultations suggested that listed companies in Hong Kong should not be single-gender boards from 1st January 2025. Nevertheless, the HKEX requires listed companies to set targets and timelines in the coming future for gender diversity; it further requires to review the effectiveness of the diversity policy, and to disclose gender ratios, plans or measurable objectiveness for gender diversity. For IPO applicants, they need to disclose their board gender policies, such as how and when diversity can be achieved. Machold et al. (2008) stated that the feminist approach is one of the effective ways to manage corporate governance issues. The appointment of female directors may facilitate such an approach to care for all stakeholders. This study expects to make practical recommendations to Hong Kong listed companies and the policymakers regarding the appointment policy of female directors.

Another critical issue is the family ownership influence on the firm financial performance. The last study on family ownership influence in Hong Kong was performed by Lam and Lee (2008). Their study was around 13 years ago, and this study expects to provide updated information about the influence of family ownership. Because of the financial tsunami in 2009 that may cause some changes in the family controls; this study intends to investigate the impact of family shareholding on firm

financial performance. Since the board owes agency responsibility to the shareholders; there is a principal and agent relationship between the board and shareholders. The shareholders employ the management to manage the board, and they are the principal of the management. The management accepts the appointment contract, and they are the agents; accordingly, they need to act on behalf of the shareholders to manage the company. Trond (1993) stated that the principal and agent relationship is formed when a formal contract with an agent to act on behalf of the principal to perform some tasks, and the outcome can affect the principal and agent. Hence, a principal and agent relationship exist. The board should know of the existence of such a relationship and properly use the power to lead the company, and it should prevent any conflict of interests between the shareholders and the board.

Apart from shareholders, the board of directors owes responsibilities to different stakeholders; however, it may not be the principal and agent relationship. One important thing is that the board owes stewardship responsibility to the managerial staff of the company for overseeing the performance of the managerial staff, such as the strategy formation. The board of directors needs to align its interests with those of the managerial staff and ensure that they also act in the best interests of the shareholders. Furthermore, the board of directors should prevent any conflict of interests between the managerial staff and the board. In this case, the independent non-executive directors can exert their influence, which can explain the reason why a board needs to appoint independent non-executive directors to enhance monitoring and control.

Eisenstein (2020) stated that the board of directors should assist the company to maintain its relationship with different parties, such as vendors and customers.

According to her study, relationship management is one of the major roles of the board. The board needs to know the needs of the stakeholders, such as vendors and customers, and to maintain good relationships with them. Relationship management is an emotional intelligence skill, and board members should be self-aware and self-regulated. They should also master relationship management and social awareness because vendors need the company to settle bills on time, and customers need high quality goods or services.

A board of directors needs to recognize its responsibility to the government and the public as a corporate citizen. A company needs to take corporate social responsibility and consider its interests, such as reducing pollution and contribution to protect the environment. By assuming corporate social responsibility, a company can build brand loyalty and then enhance its corporate image. It can also increase the recognition of customers and increase profitability. Machmuddah and Sari (2020) found that a well-defined policy for corporate social responsibility can increase profitability and firm value. According to their study, the disclosure of a corporate social responsibility policy has a statistically significant positive relationship with firm value and profitability; therefore, such disclosure can enhance corporate value. The HKEX requires all listed companies to issue an ESG report, and to disclose the policy and strategy of the company regarding the environment, society, and governance of the company.

A board of directors needs to consider the different interests of different stakeholders. There are different methods to evaluate firm performances. Some of them focus on firm financial performances, such as the ROA, profitability, solvency, and capital maintenance of the company; while shareholders, trade vendors, financial institutions,

and potential investors may be more concerned about firm financial performances. Shareholders are concerned about the profitability of the company, and they want to know the dividend payout. In the long term, they expect to obtain capital gains. The other party is the trade vendors, and they want to know the payback capabilities of the company, especially the liquidity of the company. Financial institutions are also concerned about the profitability and insolvency of a company, so that they can know whether the company is able to settle loans and interest on schedule. Potential investors want to know the prospects of the company for making investment decisions.

Government and the public are concerned about other aspects of a company, such as the environmental protection policy. The government may consider policies aimed at the public interests, such as environmental protection. The public is also concerned about some policies regarding society, such as charity donations. An ESG report can make detailed disclosure on environmental, social and governance directions of the company. Employees are also concerned about the human resources policy of the company through the ESG report, in order to know the view of the company regarding human resources management. An ESG report can serve to project a good corporate image that can enhance the corporate reputation.

Different stakeholders may have different needs for financial reports. Past scholars also evaluated firm performance in financial and non-financial aspects. For financial aspects, they mainly focused on certain firm financial indicators, such as ROA, Tobin's Q, Z-Score, and profitability ratio of the company. For example, Joecks et al. (2013) discovered a negative relationship between gender diversity and the ROA. Lee (2006) found that family involvement has a positive influence on revenue and net

income. Ujunwa (2012) found a negative relationship between board size and profit and the ROA. For non-financial aspects, they mainly focused on corporate social responsibilities. Cha and Abebe (2016) and Reguera-Aalvarado et al. (2017) found that more female directors can increase the charitable contributions of the company. Obviously, a board needs to assist the company to undertake its social responsibilities.

Another important issue is the board independence. The HKEX issued a new consultation paper in April 2021 proposing new regulations with the aim to maintain the independence of the board. First, it proposes to require independent shareholders' approval for the re-election of independent non-executive directors who have served more than nine-years under the "comply or explain" approach. Second, it requires the appointment of new independent non-executive directors at the next annual general meeting if an independent non-executive director on the board has served more than nine years under the "comply or explain" approach. Third, it requires a nomination committee which is chaired by an independent non-executive director and comprised of most independent non-executive directors under a mandatory approach. The responsibility of independent non-executive directors is to monitor the behavior of the executive directors, which serves as the reason for the appointment of independent non-executive directors to the board. This study tries to investigate the influence of the number of independent non-executive directors on the firm financial performance.

The new listing rules of the HKEX implied the recent hot issues, i.e., family control issue, board gender diversity, and board independence. The other issue is the CEO duality, and it is a hot issue since the last decade. Apparently, it is worth to investigate any recent changes in this issue in Hong Kong. Furthermore, previous studies in other countries had investigated two other factors — the number of board meetings and the

educational level of the board members; however, the impacts of these two factors have not been examined in Hong Kong. Accordingly, this study includes the examination of these two factors.

Based on the above identified variables, the aim of this study is to evaluate the effect of board characteristics on firm financial performances of listed companies in Hong Kong.

1.3 Aim and objectives of this study

The roles and responsibilities of board directors was the motivation to determine whether the characteristics of the board can affect the firm financial performance. Sulong and Ahmed (2011) found that board independence, smaller board size, and non-role duality are important for firm value and dividend policy. Firm value and dividend policy are the two major concerns of shareholders. This study expects to make suggestions regarding good board structure and practice to improve firm financial performance, because the HKEX expects to promote board diversity in the coming year. For example, the HKEX will require listed companies to appoint more female directors in order to improve the board's decision-making process and the board effectiveness. It is high time to conduct this study on the relationship between board characteristics and firm financial performance. To perform this study, there are two different research methods to evaluate firm performance. One is the quantitative research method, and the other is the qualitative research method. To evaluate firm financial performance, this study adopted the quantitative research method and selected appropriate firm financial indicators. To evaluate non-financial performance, this study adopted the qualitative research method; specifically, for non-financial evaluation, focus group interviews were used to collect the data as suggested by

Narkunienė and Ulbinaitė (2018).

This study evaluated firm financial performance from three different perspectives—ROA, Tobin's Q, and Z-Score—to test the relationship between board characteristics and firm financial performance. Board characteristics are namely the degree of family involvement, gender diversity, CEO duality, percentage of independent non-executive directors, number of board meetings, and education level of board members. Where degree of family involvement refers to how many of family directors inside the board, gender diversity refers to how many female directors are on the board; CEO duality refers to whether the same person acts as the chairman and CEO; percentage of independent non-executive directors reflects the degree of independence of the board; number of board meeting and the education level of board members implied that this characteristic may affect board structure of a firm. The aim of this study is to identify which board characteristics may have the significant relationships with financial performances of a firm. In addition, this study also evaluated the moderating effect of board size on the relationship between board characteristics and firm financial performance.

Of the three firm financial indicators, ROA measures the efficiency of the company in using assets to generate returns, and it evaluates the profitability of the company. Tobin's Q measures the market value of a company, and it reflects the market perception on firm value. Finally, Z-Score measures the solvency of the company. These three ratios can satisfy the needs of different stakeholders. ROA represents the profitability of the company; therefore, shareholders and trade vendors may be interested in any relationships between ROA and board characteristics. Tobin's Q represents the market value of the company; therefore, potential investors may need to

know any relationships between Tobin's Q and board characteristics. Z-Score is the solvency ratio of a firm; therefore, financial institutions and trade vendors may want to know the Z-Score as it may affect the payback power of the company. Employees may also concern solvency problems to pay their salaries.

The board owes responsibilities to different stakeholders. Under G20/OECD Principles of Corporate Governance, a corporate governance framework needs to ensure effective monitoring of the managerial staff by the board. The board is accountable to the company as well as shareholders. According to OECD, the definition of corporate governance is the following:

“It involves a set of relationships between an organization’s management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the organisation are set, and the means of attaining those objectives and monitoring performance are determined.”

In this study, there are four objectives. Through these four objectives, it expects to find better board structure to improve the firm financial performance. It provides suggestions to the listed companies and policymakers, such as the HKEX, about the responsibilities of different board members inside the boardroom and how to improve the quality of the board in order to maintain the position of international financial center of Hong Kong. In order to achieve the research aim of identifying which board characteristics may have the significant relationships with financial performances. It needs to achieve the research objectives first.

The objectives of this study are

Objective 1: To identify the board characteristics in terms of corporate governance which have the significant relationships with the firm financial performances,

Objective 2: To achieve insights into the responsibilities of different board members towards different firm financial indicators,

Objective 3: To investigate what constitute a good board structure to improve the firm financial performances,

Objective 4: To describe a full picture to the policymakers, such as the HKEX, about which board characteristics to be improved to facilitate the firm financial performances and enhance the board quality.

Kemp (2006) stated that a board takes a major responsibility for decision-making of the company, and it should take into considerations of the expectations of shareholders. According to her study, the board of directors cannot act as a rubber stamp and approve all decisions without any considerations of shareholders' expectations. Board directors should perform their agency responsibilities carefully through a good strategy formation process to improve firm performances. Besides, a board needs to deal with different matters of the company and satisfy the needs of different stakeholders. Among different stakeholders, the expectations of shareholders relate to the financial performances of the company. Good financial performances are very important to satisfy the expectations of the shareholders, because they focus on the returns of the company, such as the distribution of dividends and capital gains in their shares. Regarding firm financial performance, this study tried to evaluate it from

different perspectives. First, under agency theory, the board of directors is the agent accountable to the shareholders and acts for their best interests. Second, under stakeholder theory, the board of directors is accountable to the stakeholders and should act in good faith to prevent any frauds, such as that in the Enron and Worldcom scandal cases.

The major responsibilities of the board of directors are that it is accountable for decision-making and maximizing the wealth of the shareholders. Specifically, they need to form strategies to enhance firm financial performances, and they need to design a good policy for the whole company, such as achievable missions, goals, and visions. In addition, board members should monitor each other to prevent misconduct. All these issues related to firm financial performances, because a good decision can facilitate the firm financial performance, and a good monitoring system can prevent over-aggressive decisions of the board and prevent deterioration of the firm financial performance. Furthermore, board members should act bona fide with honesty, fairness, sincerity, openness, and professionalism. These five characteristics are very important for executive directors and independent non-executive directors to minimize agency problems and improve the financial performance of the company. Board members should fulfill the board's performance and conformance roles. Regarding board performance, the board needs to achieve good performance. One important criterion is to achieve good firm financial performance. In its conformance role, the board needs to assist the company to fulfill the corporate governance requirements of respective codes, laws, and regulations. All policies and strategies should strike a balance between achieving good firm financial performance and meeting the regulatory requirements.

This study evaluated the impacts of the percentage of independent non-executive directors and the number of board meetings on financial performances. Regarding board responsibility, the board should know how to delegate the board's activities to share the burden of the board. Board activities are divided into monitoring and advising activities. Monitoring activities are mainly handled by the audit committee, remuneration committee, and nomination committee. Advising activities are mainly the responsibility of the compliance committee, risk management committee, sustainability committee, and corporate governance committee. Those monitoring committees are chaired by independent non-executive directors. Such monitoring activities provide opportunities for independent non-executive directors to evaluate some important decisions. One example is the evaluation of audit reports and selection of an external auditor under the audit committee. The independent non-executive directors performed important roles in different committees. First, they can provide views inside the audit committee. Second, apart from the audit committee, the independent non-executive directors can make suggestions on the appointment of executive directors inside the nomination committee. Third, the board committee can monitor and control the board's structure, remuneration of the board members and prevent any conflict of interests of the board members.

From this point of view, it can show that a good board structure can assist the decision-making and policy formation of the board. Some board characteristics can facilitate the decision-making process, such as family involvement, gender diversity, CEO duality, education level of board members, and the number of board meetings. These board characteristics can exert monitoring and control of a board and enhance the accountability of board members. The independent non-executive directors may have an impact on the accountability of the board members in terms of

decision-making.

The board of directors cannot only focus on wealth maximization for shareholders; the board of directors should also prevent moral hazards and adverse selection according to Eisenhardt (1989). In addition, board directors need to use their power properly, and they need to ensure that the company fulfils different regulations of different regulatory bodies, such as the HKEX, the SFC, and the HKICPA.

1.4 Significance of this study

Board diversity is an important topic in the corporate governance area, and it involves key dimensions, i.e., family control, age, gender, education, and nationality. Many previous studies had performed analyses on different dimensions of board diversity. Mahadeo et al. (2011) found that the age and educational level of the board members can have a significant impact on the firm financial performance. Board diversity has an impact on the firm financial performance; for example, in Hong Kong, the majority of shareholding is held by the family, and the family members can control the decision-making of the board. This practice affects the firm financial performance. This study expects to reflect any influence of family control over the ROA or not. Furthermore, the public may have a different point of view regarding family-controlled businesses, which is reflected in the share price of the company. The effect of this issue can be investigated by identify if any relationships between family involvement and Tobin's Q. Z-Score reflects operation effectiveness and risk management of a firm. Apart from family involvement, other factors, e.g., gender diversity, board independence, and CEO duality can also influence the financial performance of a firm. This study shows that board characteristics influence those three firm financial indicators, and it presents suggestions to improve board

composition for better financial performance. This study can also help enhance operational efficiency of a company. For methodology, this study refers to similar past studies and chooses the quantitative research method. This study investigated two critical issues in corporate governance, i.e., gender diversity and board independence. Since the HKEX intends to amend existing regulations to enhance board diversity in order to monitor board performances of firms; this study also evaluated the influences on firm financial performance of two factors—number of board meeting and educational level of board members. Because the influences of these two factors have not been investigated in Hong Kong listed company; this study provides a complete investigation from individual characteristics of board members to the whole operation of boards.

Furthermore, this study provides insights to policy makers, i.e., the HKEX about which board characteristics need to be enhanced. Since the HKEX proposed to amend the existing regulations on the number of female directors and requirements of independent non-executive directors with the aim to enhance gender diversity and board independence; it is high time to perform this study. The HKEX emphasized the importance of the roles and functions of the board members of different genders and the independent non-executive directors inside the board. For the new regulations, the HKEX required all listed companies to set and disclose numerical targets and timelines for achieving gender diversity at both board level and across the workforce (including senior management). Furthermore, the HKEX required the board of directors to review the progress of diversity policy annually under the Mandatory Disclosure Requirements. Moreno-Gómez et al. (2018) asserted that the leadership of the female directors can diverse the opinion inside the boardroom and then facilitate the performance of the company. Galbreath (2016) found that the gender diversity has

positive impact on the needs of different stakeholders of different genders. For board independence, the HKEX required listed companies to establish a nomination committee chaired by the chairman of the board or an independent non-executive director, and it comprises of a majority of independent non-executive directors. Tong (2018) stated the importance of the role of independent non-executive directors as the internal gatekeeper of the company. Mr. Tong is the former chairman of SFC. He emphasized that the roles of independent non-executive directors should be to safeguard the interests of shareholders, monitor the risks of the company's decisions, and prevent any frauds of the company. The independent non-executive directors should voice out any irregularities of the company, such as aggressive risk investment.

Annuar and Abdul Rashid (2015) also stated the importance of the independent non-executive directors to combat company's frauds. One example is the responsibility of the independent non-executive directors in the audit committee to detect frauds in financial statements as stated by Anichebe et al. (2019). Another example is the responsibility of the independent non-executive directors to enhance the disclosure of the company and enhance the confidence of the stakeholders as stated by Mohamad et al. (2010). Wan et al. (2018) found the responsibilities of the independent non-executive directors to be managing the risks of the company rather than focusing on the profitability of the company. The responsibility of independent non-executive directors should be clear inside the boardroom. Accordingly, this study investigated the current situations of any significant influences of female directors and independent non-executive directors on the firm financial performances. This study made practical contributions to the industry with suggestions to compose a good board structure for long term development, good corporate governance and enhance the firm financial performance to cater the needs of different stakeholders including

shareholders and potential investors. Apart from these two characteristics of board members, the HKEX also required listed companies to disclose the board members' attendance at general meeting in the poll results announcements. The HKEX considered the importance of the number of board meetings. This study also investigated any significant relationships between number of board meeting and firm financial performance.

1.5 Research methodology of this study

This study adopted the quantitative study method. All data were collected from the HKEX and the websites of the 120 selected companies. Reliability of the data is assured as all data are secondary and appeared in companies' annual audit reports on which statutory audits have been performed by external auditors. This study applied SPSS to run statistical analyses on 600 cases from the selected companies with the study period from 2015 to 2019.

1.6 Theory application

This study applied agency theory, stewardship theory, and resource dependence theory to interpret the statistical results. For agency theory, there is a principal and agent relationship between the board and shareholders, and the board needs to act in the best interests of shareholders and use their delegated power properly. For stewardship theory, the board needs to lead the company and assist the managerial staff to make decisions and form effective strategies. Different firm financial indicators use different theories to interpret the relationship with the board characteristics. Mak and Kusnadi (2005) stated that the board of directors should act in the best interests of shareholders and maximize the returns to them, i.e., ROA. Ouyang (2013) found the primary role of the board of directors is to ensure the best performance for

shareholders, which is also the important role of the agent. Smith et al. (2006) used the agency theory to interpret the relationship between board diversity and firm financial performance. According to their studies, female directors act as an agent on behalf of the shareholders and need to give good performance to the shareholders. Besides, Vo and Nguyen (2014) stated that the responsibility of the board of directors is to let the market recognize the performance of the company and improve market value, i.e., Tobin's Q. Anderson and Reeb (2003) found that family members act as the agent of the shareholders and need to increase the market value of the company. Regarding stewardship theory, Vo and Nguyen (2014) stated that there is a steward responsibility of the board of directors to lead the board and monitor abnormality of the company, in particular, the solvency problems of the company to meet the obligations to vendors. This issue is reflected by the value of the Z-Score. Resource dependence theory proposes that board members should contribute to the company with higher education, professional qualification, and social network resources to enhance financial performance of the company.

Agency theory explains the relationship between board members and shareholders, and it emphasizes the awareness of duties on the part of board of directors to shareholders. The stewardship theory explains the role of the board inside a company, and it emphasizes the leading ability of the board of directors to manage the company. The resource dependence theory gives insights about how board members can bring influences of independent non-executive directors and the education level of board members to the company. In particular, it emphasizes the personal capability of the board members. In this case, this study used the agency theory, stewardship theory and resource dependence theory to interpret the relationships among the dependent variables and independent variables.

These three theories suggested the key functions of the board of directors. First, a board needs to use the power properly and perform the role of agent. Second, a board needs to prevent any conflict of interests or damage to the rights of shareholders. Third, a board should contribute its specific capabilities to the company and assist the company to obtain a sustainable competitive advantage. Fourth, a board should lead the company to comply with all regulatory requirements and prevent any misconduct.

1.7 Contributions of this study

This study provides suggestions on the improvements of the three ratios—ROA, Tobin's Q, and Z-score—through the strategy on selection of the board members. This strategy can satisfy the needs of different stakeholders including shareholders, potential investors, and regulatory bodies. This study made theoretical and practical contributions. Regarding theoretical contributions, this study proved the usage of different theories to interpret the impacts of different board characteristics on different firm financial indicators. Regarding practical contribution, this study provided suggestions about how to improve the board's structure to improve different firm financial indicators with regard to the appointment of family directors and independent non-executive directors. In addition, it provided suggestions about the appointment of female directors in Hong Kong listed companies. According to the statistics of the HKCGI in 2021, only one-seventh of Hong Kong listed companies appointed female directors; hence the HKEX aims to encourage the appointment of female directors to enhance board diversity. The HKEX holds the view that different voices on the board can enhance efficiency and effectiveness. This study investigated the implication of some current controversial corporate governance issues, e.g., gender diversity and board independence. Furthermore, studies on number of board meeting and education of board members are yet reported in previous studies,

accordingly, this study provides insights in these issues.

1.8 Chapter outline of this study

Chapter 1 gives the background of this study, including the significance of this study, and the motivation to perform this study. It provides an overview of this study as well as background information and the overall logical flow.

Chapter 2 provides an in-depth study of past research on the topic of board characteristics, and it provides information to construct the conceptual framework and also the hypotheses of this study. The literature review also assists to select appropriate theories to interpret the statistical results. Based on the literature review, board characteristics to be investigated were identified and selected. Furthermore, three firm financial indicators were also selected for evaluation. Board size was selected as the moderating variable to observe the moderating influence on the dependent and independent variables.

Chapter 3 constructs the conceptual framework and the conceptual models of this study. Then the hypotheses of this study were formulated to consider the relationships for investigation. The hypotheses involve the dependent variables, independent variables, and the moderating variable. It also provides information about the construction of hypotheses.

Chapter 4 provides information about the research method of this study and the reason for using the quantitative research in this study, i.e., to make a comparison between the qualitative and quantitative research methods to evaluate the effect of board characteristics on firm financial performance. This chapter also provides the

operational definitions of different variables.

Chapter 5 provides the statistical results after completing the data collection, which are the data extracted from the HKEX and the website of the targeted companies. After completing the data collection, statistical analysis was performed by using SPSS. The chapter also provides the results of hypothesis testing.

Chapter 6 discusses the statistical results and evaluates the hypotheses of this study. Agency theory, stewardship theory, and resource dependence theory are applied to interpret the results. It presented theoretical and practical contributions by studying the stock market in Hong Kong.

Chapter 7 concludes this study with theoretical contributions from academic point of view and practical contributions from practitioner's point of view. It suggested recommendations about which board characteristics influence the firm financial performance. In addition, it presented suggestions to the management of the listed companies in Hong Kong and the policymaker of the authority. Finally, it discusses limitations of this study and makes some suggestions for future research on this topic.

1.9 Chapter summary

This chapter discusses the aim and objectives of this study. It identifies the significant of this study. One motivation of this study is tried to provide insights about the board characteristics towards the firm financial performance, especially the HKEX emphasises the importance of board diversity and board independence. Certain listing rules of the HKEX will amend in forthcoming year. It expects to provide some suggestions to the listed companies and the policymakers.

Chapter 2. Literature review

Over the past, many researchers have conducted similar studies on the topic of board characteristics. They selected several board characteristics and investigated any impacts of such characteristics on firms' financial performances. Regarding family involvement, Mak and Kusnadi (2005) found a positive relationship between family involvement and firms' financial performances. Regarding gender diversity, Rossi et al. (2017) and Bonn (2004) found a positive relationship between gender diversity and firms' financial performances. Regarding CEO duality, Donald and Davis (1991) discovered a positive impact between CEO duality and firms' financial performances, but Carter et al. (2003) found a negative impact between CEO duality and firms' financial performances. Different researchers may obtain different results for the same board characteristics; therefore, according to Forbes and Miliken (1999), it is better to perform more research to understand how to constitute an effective board to enhance firms' financial performances. It is asserted that different financial indicators are influenced by different board characteristics.

2.1 Introduction

This chapter reviews the contributions of the past research in the subject area and provides further information to construct the conceptual framework, conceptual models, and hypotheses of this study. Firstly, this chapter discussed the governance roles of board directors, and secondly, it evaluated the relevant theories to explain the relationship between board characteristics and the firms' financial performances. It explored board characteristics and identified some of them for investigation in this study. Apart from board characteristics, this review identified financial indicators which can be used to evaluate firm performances. It investigated different board characteristics that have different influences on the firm's financial performances in

past. This chapter provides information about how to construct the conceptual framework and the conceptual models of this study.

Board characteristics comprise people from different backgrounds whose attitudes and experience may affect the decision-making on investment projects of a company. Such attitudes and experience can also affect the financial and non-financial performances of a company. Adverse selection and moral hazard problems are main issues of board characteristics; both are agency problems of the board. Adverse selection is due to a conflict of interests between the board of directors and the shareholders during the decision-making process, where the board of directors makes decisions for their interests rather than that of shareholders (Hendry, 2002). With respect to moral hazard, it means that the board of directors does not make the best decisions for the shareholders. Both adverse selection and moral hazard problems are due to the information asymmetry between the board and shareholders. Since information transparency can minimize these problems; the board composition is very important.

2.2 Governance roles of the board

In Hong Kong, the listing rules of the HKEX are both statutory and non-statutory to highlight the role of a board. A board is composed of directors with different backgrounds, because their expert knowledge can make contributions to companies. The primary function of the board is that a group of individuals are elected to oversee the activities of a company. Board directors play a key role to link the shareholders who provide capital to the company and the managers who use the capital to create value. According to OECD, a board has two main governance roles, the primary role, and the secondary role. Regarding the primary role, a board has the advisory capacity,

and it advises the management team on the company's strategic and operational direction as stated in the paper of Baysinger and Hoskisson (1990). Regarding the secondary role, a board monitors the management of the company and ensures the management team to act diligently in shareholders' interests. Naciti (2019) found that the governance role of the board depends on the board composition. According to his study, a good board composition can maintain a firm's sustainable performance that a firm can use financial performance and social performance to evaluate. The three important issues of a board composition are the board diversity, the board independence, and the CEO duality. For the board diversity, it refers to the number of female directors and the educational backgrounds of board members. For the board independence, it refers to the number of independent non-executive directors. For the CEO duality, it refers to the same person act as chairman and CEO. Setia-Atmaja et al. (2009) addressed the important governance role of the board that focuses on the finance aspect. According to their study, a board needs to monitor and control the dividend and debt policy of the company. It needs to prevent the family ownership from manipulating the dividend and the debt of a company and expropriating the rights of minority shareholders.

Dr. Jin Xiaobin (Nov 2021) of HKCGI claimed that the governance role of a board means the value management on behalf of shareholders. Value management includes value creation, value maintenance, and value enhancement. Value creation is related to the strategy and the operations of the company, and the board should make the long-term planning of the company. Value maintenance is related to corporate transparency and governance practice, and it builds a good brand name for the company and attracts investors. Value enhancement relates to the capital operations and financing of the company. It reflects how effective and efficient the board utilizes

a firm's capital, and the value of a company measures the market value of the company. According to Dr. Jin's (2021) study, the market value of a company can reflect the quality of board decisions. Nicholson and Newton (2015) found that a board needs to take the corporate governance role and ensure senior management to meet the compliance role and achieve good performance. A board needs to generate returns to shareholders without exposing excess risks. At the same time, it needs to comply with the regulatory requirements.

Chapter 3 of the Hong Kong listing rules clearly stipulates the responsibilities of directors that directors shall act honestly and in good faith in the interests of the company. In addition, the rules provide guidelines on the duties and responsibilities of the board of directors to the shareholders. For the enforcement of such statutory rules, the HKEX and the SFC are the major regulatory bodies that monitor the performances of listed companies and ensure the smooth operation of the stock market. In addition, Appendix 14 of the Hong Kong listing rules states the role of directors regarding good corporate governance. Apart from these Hong Kong listing rules, the Companies Ordinance guides the duties of the directors, and Part 10 of Section 622 of the Companies Ordinance stipulates the duties of directors regarding the governance of companies. The listing rules and company ordinances are important documents to guide the board of directors for discharging its duties. Regarding non-statutory rules, there is a code of best practices in the listing rules to guide the board of directors about the best practices of the board regarding critical issues during the decision-making.

2.2.1 *Roles of directors*

Regarding the roles and functions of the directors of a company, Townsend (2007) investigated the roles of directors, focusing on strategy formation by linking up the board of directors and the management team of a firm. The substantial responsibility of the directors is how to set the corporate strategy to enable other managerial staff to cooperate with the board. Jan and Sangmi (2016) highlighted that the role of the board needs to monitor the activities of the management team, take the advisory and supportive role, and ensure the overall governance of the company. According to their study, board members need to provide strategic direction to ensure organizational objectives are fulfilled. Colin (1992) suggested that directors need to know their roles inside their company. Unlike other managerial staff, directors need to design the overall strategy of the company, to know how to manage an effective board, how to cooperate with other board members, and how to maintain the effectiveness of the board. Directors need to show their competences in the boardroom. Their competences may be the critical success factors, but such competences depend on the personal traits of the directors. Colin (1992) addressed the functions of board directors, but he ignored the analysis about how to assess the performance of directors with an objective measurement. John and Senbet (1998) stressed that the major governance role of a board is to monitor the operation of the company. According to their study, governance role depends on independence, size, and the composition of a board. Ozdemir and Kilincarslan (2021) emphasized that the most important role of a board is to cooperate with shareholders to manage the company. In addition, they suggested that shareholders should not only contribute funding; they should involve further in the operation of the company by attending board meetings.

Regarding major areas of directors' duties, Gopinath et al. (1994) suggested that directors should mainly focus on three principal areas: control, service, and strategy. For the control aspect, directors need to ensure how to maximize the wealth of the shareholders in terms of dividend payments. However, it may be difficult to conclude that dividend payments can satisfy the needs of all shareholders, because some shareholders prefer stable dividend policy which can ensure capital gain and long-term sustainable development of the company. In this case, Gopinath et al. (1994) do not consider the retained earnings for further development. In the service aspect, it means that the role of directors is to serve the shareholders, and directors should use their power properly. In the strategy aspect, the role of directors is to assist the company to form the strategy and make decisions for long-term development. Regarding strategy formation, Tricker (1984) and Guar et al. (2015) argued that the board needs to set the strategic direction, oversee the progress of implementation of the strategy and monitor the performance of the strategy. The board of directors needs to ensure the effectiveness of the strategy, and its primary function is to ensure firm smooth performance. The board's effectiveness is so important, that a responsible board of directors should seek a good board composition.

Fama and Jensen (1983) hold the view that the primary duty of the board is to act on behalf of the shareholders and exercise its control over the senior management of companies. As a board of directors, it can provide an overview of the strategy of the company and exert control over different departments to maximize the benefit of the shareholders. Abdullah (2004) and Lightle et al. (2009) stated that the board of directors needs to know its fiduciary duty to lead the firm to achieve the best performance, hence it needs to control the performance and build up a good organizational culture.

2.2.2 *Responsibilities of directors*

One key responsibility of the board of directors is to meet the expectations of investors. Brennan (2006) reviewed certain literature and found an expectation gap between the board and shareholders. According to his study, the expectation gaps are due to (a) difficulty of monitoring in practice, (b) firing the CEO, (c) ineffective exercise of control by board, (d) information asymmetry, and (e) non-independence of the board. From shareholders' point of view, the critical issue is to monitor the conducts and financial performances of the board. For this purpose, firm financial indicators provide objective evidence to evaluate the board's performance. To meet the expectations of shareholders, Hunt (2000) concluded that the board of directors should assist the company to use its resources effectively to achieve good performance. To enhance firm financial performance, Langton and Robbins (2007) found that the major responsibility of the board is to make strategic decisions on behalf of the company. The major role of the board is to manage the company smoothly and satisfy the needs of the shareholders. The literature review identified that the major responsibilities of the board are the effective and efficient management of the company and the utilization of corporate resources to meet shareholders' expectations.

2.3 Theoretical perspectives

To interpret the relationship between board characteristics and firm financial performance, there are several theories to explain the phenomenon. The researchers use different theories to interpret the phenomenon. In previous studies, a multi-theory approach was used to interpret the findings. It is appropriate to use different theories to interpret the results as suggested by Chrisman et al. (2003) and Corbetta and Salvato (2004). Bachiller et al. (2014) also stated that one cannot only use one theory

to interpret the relationship between board characteristics and firm performance. This study uses multiple theories to explain the linkage between board characteristics and firm performance. Reference to previous studies shows three most important theories which are agency theory (Hampel, 1998), stewardship theory, and resource dependence theory (Donaldson & Davis, 1991). Since board members have the agency responsibility and the steward responsibility; this study applied these three theories to interpret the relationship between board characteristics and firm financial performance.

2.3.1 Agency theory

Agency theory is used to interpret the relationship between the board and shareholders, and it is the key theory to interpret the relationship between principal and agent. This theory needs to resolve the conflict of interest between the principal and agent. The reasons to resolve agency issues are that the principal and agent possess different information and they may have different interests. As principal, shareholders may expect to receive dividends and capital gains under the assumption of the least risk. As agents, the board members expect to maximize their remunerations. Since board members may have high intentions to make high-risk investments, there may be a conflict of interests which can also be reflected by the poorer financial performance of the company. The incentive alignment effect means that board members will choose high-risk projects to obtain higher remuneration. It is quite risky for the remuneration of executive directors to be linked with firm financial performance. Specifically, some shareholders may not expect to take high risks. The incentive alignment effect of board members opposes the risk-averse effect of shareholders, which is a common example of a conflict of interests between board members and shareholders. Therefore, the enhancement of corporate disclosure can improve the situation.

Jensen and Meckling (1976) addressed the crucial relationship between managerial behaviour and the ownership structure of the company. According to their study, the performance of the board of directors is short-term, and it only satisfies the short-term interests of the shareholders in terms of dividend payments. The board may not be concerned about the long-term interests of the shareholders as well as the companies. According to the three basic assumptions of the agency theory of Jensen and Meckling (1976), agents are opportunistic and act on their interests rather than that of the shareholders. In addition, information is asymmetric, and the agents can act opportunistically because the ownership and control are separated. Lastly, agents require an incentive to motivate them to act in the best interest of the principal. The agency theory can be used to explain such behaviour of a board, and this situation is quite common in family-controlled businesses. Unlike Jensen and Meckling (1976), Hillman and Dalziel (2003) found that the basic assumption of agency theory is the monitoring role of the board of directors regarding company management, and Bainbridge (1993) obtained the similar results. He expounded that the primary role of the board is the obligation to owe a fiduciary duty of monitoring the management of the company. Apart from executive directors of the board, Bathala and Rao (1995) elaborated that independent non-executive directors owe the responsibility to the shareholders. According to their study, the dividend payout ratio and debt leverage can be tightly controlled. They found the inverse relationship between the number of independent non-executive directors and dividend payout ratio as well as debt leverage. They asserted that the whole board owes the agency responsibility toward the shareholders.

Hampel (1998) claimed that the agency theory is one of the important theories to interpret the relationship between the board and firm performance. The following is an illustration of the agency theory:

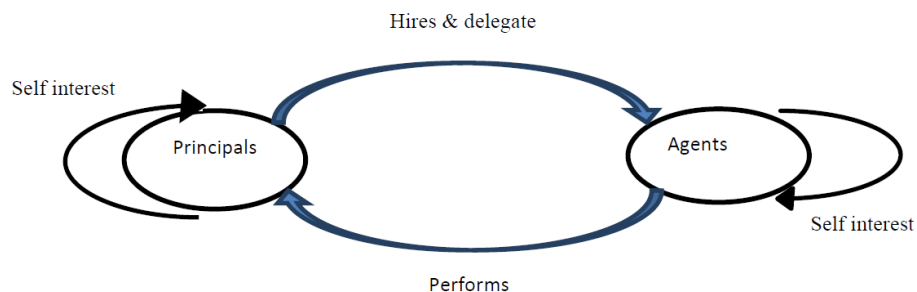


Figure 1: Principal and Agent Model (Abdallah and Valentine, (2009))

Figure 1 shows the relationship between principal and agent. The agent should perform his/her duty well and for the best interest of the shareholders, and he/she should prevent any self-interest.

Fama and Jensen (1983) clarified the principal and agency relationship between the board of directors and shareholders. The board of directors needs to act in the best interest of the shareholders. They need to try to resolve the conflicts of different stakeholders. To resolve the conflict between shareholders, it is necessary to perform a stakeholder analysis to identify the needs of different stakeholders.

The duality of the CEO is one of the common agency problems. The conduct of the CEO affects the quality of company decision-making and causes a corporate governance issue. According to the Hong Kong listing rules, the good practice may be a separate person acting as CEO and chairman of a listed company to maintain the independence of the CEO and chairman. It can also provide the effect of cross-monitoring of these two strategic roles because if the same person acts as the

CEO and chairman, it will cause a role conflict. The problem of duality allows a CEO to dominate the whole board of directors to satisfy their interests. In this case, it only sacrifices the interest of shareholders. Under agency theory, the confidence of shareholders will drop as the CEO is the agent of the shareholders. The decisions made may not be in the best interests of the shareholders. To reduce agency costs, organizations can segregate the roles of CEO and Chairman.

Regarding the relationship between gender diversity and firm financial performance, Poletti-Hughesa and Briano-Turrent (2019) performed a comparative study of family female directors and non-family female directors and used the agency theory to interpret the responsibility of female directors from two different backgrounds. Non-family directors can act as an agent on behalf of shareholders more properly. Non-family female directors can act in the best interest of the shareholders according to their study. Kakabadse et al. (2015) found that the appointment of more female directors can reduce agency costs as it can prevent the domination of the board by male directors. Hampel (1998) found the board balance is composed of diverse groups such as different genders which achieve a more balanced board structure. It can prevent a single board member or a small group of board members from dominating the decision-making process, because a single board member or a small group of board members may cause information asymmetry and discrimination of minority shareholders.

Regarding the relationship between the number of board meetings and firm financial performance, Lipton and Lorsch (1992) found that the number of board meetings has a positive relationship with firm financial performance. According to his study, it can reduce the agency costs as the shareholders can participate in the meeting and the

board members can sense their agency responsibility to the shareholders. Furthermore, it can enhance the monitoring functions by increasing the number of board meetings. Eisenhardt (1989) stated that the major problem is the conflict and misunderstanding between principal and agent under an agency theory. Increasing the number of meetings can monitor the performance of the board members and inform them the expectations of the shareholders.

Regarding the relationship between the education level of board members and firm financial performance, Vitolla et al. (2019) elaborated that an effective board should have good communication within it. It should comprise board members with high academic and professional knowledge so it can enhance the quality of financial reporting and then maintain good communication with shareholders because financial documents, such as announcements, interim reports and financial reports are the main communication tools with shareholders. Board members with high education can enhance the quality of financial documents and reduce agency costs under the agency theory. Agency costs are the dissatisfaction of shareholders to poorer transparency of the company policy as the shareholders cannot know how the board uses their funds. According to their study, board members with high education can improve the quality of the financial documents and enhance the confidence of the shareholders in the quality of the financial reports. The HKICPA helps to update the conceptual framework to enhance accounting transparency in terms of preparing financial statements. Through increasingly high-quality board members, a company can keep abreast of the times to cope with changes in surrounding business environment and regulatory requirements.

2.3.2 *Stewardship theory*

Regarding stewardship theory, the board of directors acts as a good leader and maintains trustworthiness with the board members. The role of the CEO is to lead the organization to make strategic decisions. Under the guidance of the CEO, efficient and effective decisions can be made by the board. Donaldson and Davis (1991) stated that the role of the board of directors is as a steward of the managerial staff of the company to improve the performance of the company. The relationship between the chairman and the board members is very important as the highest level of decision-making authority. Donaldson (1990) asserted that executive directors should have in-depth knowledge of the business and they need to lead the company to go ahead; hence, executive directors need to steward the company into the future. Brio et al. (2013) explained that directors' behaviour is influenced by their trust in the CEO. Without a good relationship between the CEO and the board, it is very difficult to make a good decision for the company. However, it may be difficult to measure trust by quantitative and qualitative methods; because trust is quite a subjective feeling, and one cannot use statistical methods to measure it. Furthermore, there may be no objective standard to measure the trust level. The measure of the effectiveness of board characteristics needs an objective standard, and firm financial indicators may serve the purpose.

The following is an illustration of the stewardship theory:

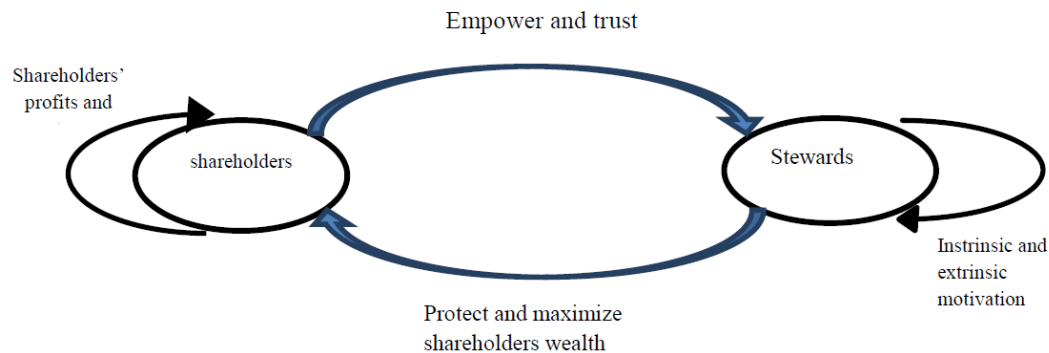


Figure 2: Stewardship Model (Abdallah and Valentine, (2009))

Figure 2 shows the relationship between the board of directors and shareholders under stewardship theory. It needs trust between both parties. Similar to agency theory, shareholder wealth needs to be maximized, but more emphasis may be put on the internal management between the board of directors and the management of the company. A board needs to motivate the managerial staff to explore their potential and make contributions to the shareholders. Dumay et al. (2019) pointed out that the stewardship theory emphasizes the importance of trust-building, because it is very important to build trust in a business environment.

Low et al. (2015) found that the appointment of female directors can enhance the steward function of a board; especially as female directors can be suited to the changing surrounding environment and help cope with strong cultural differences, because, according to their study, female directors can handle human relationships better. In addition, their study discovered a positive impact of female directors on firm financial performance based on Asian countries including Hong Kong, South Korea, Malaysia, and Singapore. Gulzar et al. (2019) investigated the stewardship behaviour of female directors, and they discovered that female directors could make better

decisions regarding corporate social responsibility issues, which help to improve the corporate image. In Hong Kong, since the HKEX emphasizes the importance of ESR reporting; female directors may assist the company to enhance the disclosure in the ESR reports. The ESR report is one of the important communication channels between the company and the stakeholders. An ESR report covers the environmental policy, human resources policy, and social policy of the company; it takes considerations of the interests of various stakeholders. Therefore, it increases the transparency of the company, and it can also strengthen the confidence of the investors in the company. It can assist the company to obtain long term benefit.

Alsartawi (2019) argued that the number of board meetings has a negative relationship with firm financial performance. According to his study, increasing the number of board meetings requires the preparation of more information, and it involves large amounts of time costs. The stewardship function of the board meeting may deteriorate. Stewardship is the accountability of the board of directors to the shareholders as suggested by Howe (2000). According to his study, the key function of the board is being accountable for decision-making. The critical point is how to build trust between the board and the shareholders. In this regard, the board transparency is very important, and it is also the spirit of stewardship theory as shown in Figure 2.

The higher education level of board members can enhance the confidence of the shareholders on the board, because the board needs to lead the company to make correct decisions. According to Bundt (2000), the professionalism of the members can enhance the stewardship role inside the organization. According to his study, the most important part of the stewardship role is the sense of accountability with such

directors can exert the leadership role more effectively. Donaldson and Davis (1991) expounded that stewardship theory needs the manager to be responsible to the shareholders. According to their study, the key issue is how managers can obtain autonomy for decision-making to achieve better firm financial performance. The critical issue is how to enhance the trust of shareholders on the board. Board members with higher education can enhance the trust of shareholders according to Bundt (2000). Increasing the board size may introduce more highly educated board members. In this case, there is a positive moderate influence of board size on the relationship between increasing board members with master's degrees or above and firm financial performance. The stewardship theory can interpret the relationship between dependent variables and independent variables.

2.3.3 *Resource dependence theory*

Resource dependence theory reflects the importance of the board or CEO in the contribution of specific resources to the company. Audretsch and Lehmann (2005) stated that a director is a competitive tool to assist the company to convey knowledge and facilitate access to further external resources. The CEO or the directors will participate in roadshows to present the business to institutional investors. The board members present their experience, skills, and talents regarding decision-making. Hillman et al. (2000) asserted that the most important role of the board of directors is the resource provider that facilitates access to resources needed by the company. Muth and Donaldson (1998) suggested that a board should make network connections and assist the company to obtain more resources. A board of directors should seek resources and also investigate the surrounding business environment under the stewardship function to improve firm performance. The resources dependence theory can be combined with the stewardship theory to explain relationships between board

characteristics and firm financial performance. Pfeffer and Salancik (1978) illuminated that the board of directors can assist the company to obtain important resources and enhance firm performance. Resource dependence theory can be combined with other theories to interpret the relationship between board characteristics and firm financial performance. Compared with several prior studies, it shows that the importance of the CEO or directors is a social networking that assists the company to obtain more resources like a resource hub of the company. But it may be difficult to evaluate how effective such social networking is. However, one indirect measure may be the firm financial performance.

Similar to other previous studies, Johnson et al. (1996) posed that directors are to provide advice and counseling on the use of resources and the access to possible resources, e.g., fundraising activities. Board members should recognize the leadership role of the CEO; otherwise, the CEO cannot lead the board to use the firm's resources effectively including shareholders' fund. The CEO should have good interpersonal skills to handle different kinds of relationships. Their study used the efficiency measurement of resources as the dependent variable, and the study used seven independent variables—the ability, integrity, and benevolence of the CEO, board performance, monitoring, country dimensions and financial performance of the company. The researchers surveyed with questionnaires sent to the directors of major organizations in three different countries, i.e., Singapore, Spain, and Canada. Their study also collected information from different cultures of the board of directors. The study investigated any statistically significant relationships between the dependent variable and the independent variables by running regression analysis after data are collected. Their study mainly measured the trustworthiness of the CEO, and it discovered that only the agency theory was relevant to facilitate the building of a

trusting relationship between the board and the CEO. The result shows that a CEO with higher trustworthiness requires less monitoring, and the degree of trustworthiness of the CEO can reflect his ability to manage the board. The important contribution of their study was to provide a signal about how effectively CEOs can reduce the monitoring costs and facilitate board performance. However, the limitation of their study may be that the subjective opinions of board members may not represent the whole company. Accordingly, random sampling was performed to select a different level of managerial staff for the survey, because this sampling method can minimize the opportunity for bias. Apart from the CEO, the board of directors is very important under the resources management. Pearce and Zahra (1992) posed that boards of directors need to facilitate resource exchange between the company and the surrounding business environment. A company can adapt to changes of the business environment if the company can know its discrepancies and obtain required resources.

Pfeffer (1972) stressed the importance of an optimal structure of an organization. A company is limited by its resources, and the board of directors needs to know how to use the resources more efficiently to satisfy the interests of different stakeholders. Freeman (1984) suggested that the board of directors needs to perform stakeholder analysis to identify the diverse needs of different stakeholders. Selznick (1957) pointed out that a board needs to identify the interests of the parties involved in the strategic management process. According to this institutional theory, the board of directors needs to know their roles to different stakeholders. According to his study, the board needs to use resources effectively to satisfy the needs of the stakeholders, because different stakeholders have different expectations from the company.

This literature review revealed that three major theories can complement each other. Madhani (2017) pointed out that the evaluation of the performance of the diverse roles of the board cannot solely be interpreted by a single theory. According to his study, this may be due to different stakeholders having different expectations from firm performance. Under the agency theory, shareholders expect to receive the maximum financial returns. Under the stewardship theory, the management of the company expects to achieve long-term development and generate continuing earnings in the future. In addition, both shareholders and managerial staff expect the board of directors to use the resources effectively and efficiently. The shareholders need to receive dividends as returns of their investment, while managerial staff needs to ensure smooth operational flow in the workplace. For CEO duality, Donaldson and Davis (1991) clarified that both agency theory and stewardship theory conclude that CEO and chairman roles need to be separated to maximize the shareholders' interest, because such division can facilitate the monitoring and steward functions of these two positions.

This study applied three theories to interpret the relationship between board characteristics and firm financial performance. It includes (1) the agency theory to interpret the relationship between board members and shareholders, (2) the stewardship theory to explain roles and responsibilities of board members, and (3) the resource dependence theory to explain how different board members may contribute different competencies to the board. The agency theory explains that the executive directors should maximize the wealth of the shareholders and lead the company to make better decisions. The stewardship theory explains that independent non-executive directors have quite different roles and responsibilities. They need to monitor the performance of the board members and may not focus only on the wealth

maximization of the shareholders. The resource dependence theory explains that different board members may have different competencies to bring to the board. They may exert their influence on different firm financial performances. Accordingly, each theory can complement the other to interpret the findings of this study. Gaur et al. (2015) articulated the importance of using the three theories to develop the governance framework of the company. They use agency theory, stewardship theory, and the resource dependence theory to divide the responsibilities of the board members under the managerial framework of the company. The Corporate Governance Guide of the HKEX stipulates the three important roles of the board. For the agent role, the board has accountability to shareholders and stakeholders. The board should act in the best interest of different stakeholders. For the steward role, the board needs to lead, direct, and supervise the listed company's affairs to enable long-term success of the listed companies. For the role of the resources facilitators, the board should ensure the adequacy of resources, staff qualifications and experience, especially for the issuer's accounting, internal audit and financial reporting functions. This study selects the independent variables through the three roles of the board. For agent roles, this study selects the number of family directors, the number of female directors, and the number of independent non-executive directors. These three characteristics of board members have owed the responsibility to the stakeholders. For the steward role, this study selects CEO duality and the number of the board meeting, where CEO duality is a critical issue; because it weakens the stewardship function of the same person who acts as chairman and CEO. The number of the board meeting can affect the stewardship function of the board, because the increasing number of board meetings may mean that the board members can meet more time to discuss company affairs; therefore, it enhances the stewardship function of the board. For resources role, this study selects the number of board members with master's degrees

or above, because, according to the Corporate Governance Guideline of the HKEX, the resources' role of the board should ensure the high quality of staff. In this case, the high qualification of board members may represent good resources to the company, and they can contribute more to the board and facilitate the decision-making process. These three theories can cater to evaluating the board characteristics of different firm financial performances.

2.4 Board characteristics of listed companies in Hong Kong

Board characteristics are attributed to board size and the board structure. Different companies have different board sizes, and the board size determines the number of different types of directors, i.e., the number of family directors, number of female directors, and percentage of independent non-executive directors. Board size depends on the characteristics of the stock market in which the listed companies reside. Taking Hong Kong as an example, there is a single-tier board structure, and this is popular in common law jurisdictions, e.g., Australia and UK (Datwani et al., 2018). For civil law countries, companies have a dual-tier board structure, and there are two tiers of boards in a company. One is an executive board, and the other is supervisory board. Both boards are monitored by each other. Mainland China is an example of having a two-tier board structure. Therefore, different regulations cause different board characteristics.

Apart from board size and board structure, boards are composed of members with different backgrounds. The shareholders expect each member to contribute something to strategy formation and decision-making. Due to the different backgrounds of the board members, there may be different characteristics, which is called board diversity. Board diversity can be due to age difference, educational level, nationality, and

gender. As different board characteristics may affect the firm financial performance, this study expects to identify which board characteristics enhance the financial performance of listed companies in Hong Kong. This study provides suggestions on the board composition which can improve the firm financial performance.

2.4.1 *Family involvement on the board*

One common phenomenon of family involvement on the board of a firm is the appointment of family members as directors and CEO. Regarding the appointment of CEOs, there are some specific characteristics of family and non-family-owned companies. Family- and non-family-owned companies may have different board compositions. Family-owned companies often appoint relatives to the board as board members and even chief executive officers. In non-family-owned companies, family members may not be appointed to the board, and they will not participate in the daily operation of the company. They only maintain the majority shares of the company.

Regarding the appointment of directors, Salim (2013) investigated family-owned companies which appoint more female directors. Non-family-owned and large enterprises are less likely to appoint female directors. His study was conducted in an emerging market, i.e., Indonesia; however, his findings may not apply to developed countries. His study focused on women on executive boards. The limitation of his study is that it focused on one financial year only, i.e., 2007. Furthermore, his research was conducted in Indonesia which has a different culture with that in Hong Kong.

Regarding the characteristics of family-owned companies, Lee (2006) discovered that family-owned businesses have a high intention to limit the top management to the

family members rather than hire qualified professionals from outside. This practice aims to retain control within the family members. But the conflicts between the family members and other board members as well as minority shareholders may hinder firm performance. Many people think that the major contribution of business owners may be the resources to the firm, e.g., money and time spent on the company. Lee's study (2006) compared the different performances of the family-owned and non-family-owned companies.

Regarding the influence of family-owned companies, Dyer (1986) found that family control can affect the decision-making process, the strategy of the board, and the appointment of family members to the board of a company. Neubauer and Lank (1998) discovered that family members have the priority right to make decisions of the board and they influence the strategies, culture, and governance of the company. A family-owned business expects to maximize its interest, i.e., dividends, and it is an incentive for family-owned businesses to control the board. Neubauer and Lank's (1998) study provides reasons of the motive behind the actions of family members on the board. Kren and Kerr (1997) conducted a study about the motives of family members, and they found that board members with significant ownership are most likely to link their compensations with firm financial indicators, i.e., ROA. This finding may be a major incentive for family members to control the board to gain personal benefits. Unlike other studies, they also considered the compensation of the CEO to be related to the independence of the board. This literature review suggested that it is worth investigating any such significant relationships between family- and non-family-owned businesses and the firm financial performance in Hong Kong.

Heugens et al. (2009) conducted a study of several prior research journals, and they pointed out that the ownership of Asian firms belongs to only a few owners. This situation is quite popular in Asian countries. In other words, families hold a large block of shares and then control the board, because this type of ownership can achieve better performance. But there may be problems, for example, concentrated ownership may transfer resources from other enterprises which they control. In this case, there might be related-party transactions, and many countries have restricted such behavior. In some situations, many accounting frauds are also due to some artificial transactions by the related companies, e.g., the Enron case. As their study was based on several Asia countries, the creditability of the result may be problematic because the market situation is quite different in different markets in terms of regulations. Their study lacks a conclusion about the weakness of family-owned CEOs. It may be better to perform either a quantitative or qualitative study on the influence of family-owned CEOs on the performance of the company, because it can obtain more concrete conclusions about the influence of the family-owned CEOs. This study uses the quantitative research on the influence of various board characteristics to the firm financial performance.

Compared with Heugens et al.'s (2009) studies, Claessens et al. (2002) used quantitative research to investigate the effect of family members as CEO on the market value of the company. Their study selected target companies from Hong Kong, Japan, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. The study performed a regression analysis on the relationship between the percentage of large shareholding companies and firm performance. They discovered that over one-third of companies are controlled by families or individuals in East Asia countries, and a family ownership company has a negative impact to the market. In Hong Kong,

there are two major categories of companies: Hong Kong-based and “Hong Kong and Mainland China”-based companies. This study tried to ascertain which type of company has a significant relationship with firm financial performance. Compared with Asian countries, Faccio and Lang (2002) found that 44 percent of companies in Western Europe are controlled by families. A family ownership company will cause a board independence issue as the family members can dominate the decision-making power of the board. This situation is very popular in the listed companies of Asian countries, e.g., Malaysia, Singapore, and Korea.

Regarding family-owned businesses, many previous studies found a positive impact between family-owned companies and firm financial performance, and Family involvement can enhance the performance of the company. Mak and Kusnadi (2005) found a positive significant relationship between large block shareholding and Tobin's Q in companies in Malaysia and Singapore. Singapore and Malaysia are two different stock markets. Singapore's stock market is well-developed, while Malaysia's stock market is still developing. Their study did not provide reasons for choosing these two different markets for comparison purposes; however, their study found that the possible reason may be that both markets have undertaken corporate governance reform. Nevertheless, there are still many differences between these two countries so it may be questionable to select these two dissimilar markets. The results of the previous studies revealed that family-controlled companies are very common in Asia countries.

Some scholars obtained different results about family-owned companies and investigated the negative relationship between family ownership and firm financial performance. DeAngelo and DeAngelo (2000) found that family-owned firms and

large firms with undiversified shareholdings underperform those with diversified shareholdings; therefore, this study needs to consider the issue of company size. Demsetz (1983) pointed out that family owners may choose investments with nonpecuniary benefits and shift the resources away from existing profitable projects. This practice may be due to the personal preference of the family business owners. Compared with the results of different researchers, the negative financial performance may be due to family-owned management considering solely for their own benefits and ignoring the rights of minority shareholders, and it may be the lack of control and agent problem in the family-owned management.

To sum up, the role of management between family and non-family business management is quite different. According to Chu (2011), family business management is often the major shareholder, and the management has a stewardship relationship with the shareholders. Non-family business management has a principal and agent relationship with the shareholders, and the non-family directors may concern more about their responsibility owe to shareholders.

2.4.2 *Gender diversity of the board*

Gender diversity is another major issue, and the HKEX wants to amend the regulation and require listed companies to appoint female directors to the board. Hassan et al. (2015) found that board diversity has a significant effect on the financial performance of a company, and greater diversity brings greater creativity, innovation, and quality decisions. Their study conducted a survey to collect data and concluded some insights in this aspect, because a survey is more proper to measure creativity and innovation.

Regarding the recent trend of the appointment of women directors, Britton (2000) posed that companies need to provide the opportunity for women at all levels of management, since they can provide their professional ideas in different areas of management. Boulouta (2013) found a strong relationship between gender diversity and corporate social responsibility according to the corporate governance index; however, such corporate social responsibility index may not be available in all listed markets. The role of females cannot be ignored on the board, because it is a special social issue. Spain is the second country in the world to require a minimum number of female members to participate in boards according to Reguera-Aalvarado et al. (2017). But there is no information about the exact portion of female directors required to achieve good performance; therefore, it is difficult to say about the appropriate percentage of female directors on boards.

The reason for appointing female directors may be due to some specific characteristics of female directors. Bilimoria and Wheeler (2000) discovered that female board members can express their views from different perspectives and facilitate the decision-making process. Unlike male members, the characteristics of female members can make them more actively participate in the discussion process, and they are also willing to express their opinions with wisdom. Such interactive discussion can really have a positive influence on the board process to improve the quality of decisions; therefore, the overall results of the decision-making process can be improved. Their study provided some insights about the strength of female directors, and it further supports that board diversity is good for the development of a company. This study is tried to investigate any such influence of female directors on listed companies in Hong Kong.

By using the qualitative research method, Joecks et al. (2017) concluded that the role of women directors is to contribute their expert knowledge to the board. Their study conducted 14 interviews with the female directors of the listed companies in Germany. They found that women have more different points of view than men. Unlike males, female directors might have more concern for social matters. Their study used snowball sampling, but interviews were carried for recruitment issues, because this was due to the difficulty to find the corresponding target samples. There are advantages and disadvantages of snowball sampling. The advantage is that finding the target samples is more quickly, and the disadvantage is the quality problem of the target samples as the researcher may loss control over the selection of the samples.

Regarding the pros of female directors, Hillman and Daiziel (2003) stated that gender diversity can reduce agency problems and increase firm value due to the minimization of agency problems, because women directors are more concerned about the benefit of shareholders. Campbell and Minguez-Vera (2008) found that an increasing number of women on the board can improve a company's financial results, and there is a positive relationship between female board members and the ROA as well as Tobin's Q. The main reason is the different characteristics of males and females. However, the studies of Hillman and Daiziel (2003) and Campbell and Minguez-Vera (2008) did not provide the reasons why women directors are better than male directors. The study of Post and Byron (2015) tried to provide the reasons why the capabilities of female directors are better than those of male directors. According to their study, the inborn characteristics of males and females result in different decision-making styles. One characteristic is the risk-averse nature of females, so female directors may be more prudent in their decision-making, and they would consider every possible risk during the decision-making process. Ahern and Dittmar (2012) illustrated that Norway was

one of the first countries to enforce the regulation in 2003 and required at least 40% of board members to be female from 2008. Apart from Norway, Spain also has a similar requirement regarding the diversity of the board. Adams and Ferreira (2009) informed that Spain enforced the law to require at least 40% of board members to be female from 2015. Zillman (2019) also discovered that there are more appointments of female as CEOs in Fortune 500 companies in the US. This development was due to the good leadership style of females. In this case, there is a trend to foster diversity in the boardroom and to accept opinions from both genders.

Lenard et al. (2014) also stated that boards with a higher portion of women members can lower variability on corporate performance, such as market stock price. The characteristics of male and female directors can complement each other in the decision-making process. The overall risk can reduce through board diversity. Good risk management can enhance firm value. The board is better to achieve a balance of gender to diversify the opinions. It can understand the reason of the HKEX expects the listed companies to appoint more female directors to enhance the board diversity.

Regarding the cons of female directors, Adams and Ferreira (2009) identified an inverse relationship between the number of female directors and the financial performance of a company. According to their study, the time for decision-making can be longer with more female directors. Some previous studies discovered no relationships between gender diversity and the financial performance of a company. The shortcoming of their research was that they were unable to quantify the critical mass regarding the number of female directors. Salim (2013) found that the firm value cannot be improved even with the presence of female top management.

Some scholars have reached other conclusions on male and female directors. Low et al. (2015) concluded that sexual equality in some countries and the performance of male and female directors are almost the same. There is no apparent significant relationship between female directors and firm performance, which is the tokenism effect.

To sum up, there are different findings regarding gender diversity in the boardroom. It is worthy to find any influence of gender diversity on firm financial performance in Hong Kong, because the HKEX expects to enhance the gender diversity.

2.4.3 *CEO duality of the board*

The CEO is the most important person in the board, and he provides the overall direction to the board. CEO duality means that the same person acts as the CEO and the chairman. Under Section A.2 of the Hong Kong listing rules, the CEO and chairman should be two different persons, because this can enhance corporate governance. Two separate individuals acting as the CEO and chairman can monitor the behavior of each other. It can prevent a single person from dominating the whole board. However, CEO duality may lose its function, and it will cause a problem in corporate governance, e.g., adverse selection and moral hazard. Regarding adverse selection, the board may make decisions according to its interests, and this is very common practice where a director's remuneration was linked up with the profit budgets. However, it may not be the best choice for the shareholders. Regarding moral hazards, the board may select high-risk businesses, and the shareholders may not accept such risk. Under the agency theory, the board should use its power properly and act in the best interests of shareholders. If the CEO and the chairman are two different people, it is expected to minimize the problem of adverse selection and

moral hazard, because these two people can monitor the conduct of each other. The HKEX encourages that the CEO and the chairman are separate individual, because it can enhance the quality of corporate governance, especially in the case of family-owned business (Kiraz, 2013).

Many scholars have researched CEO duality and drawn different conclusions. Some of them consider that CEO duality is good for company performance, because family ownership can exert influence on CEO duality. Lam and Lee (2008) concluded that family control has a negative relationship with CEO duality and firm financial performance in Hong Kong. Their study was conducted in 2008 which was already 13 years ago. However, during the past 13 years, regulations and the surrounding business environment have changed. In addition, there are many Chinese companies listed on the HKEX with Hong Kong as their business base and with principal places of business located in Mainland China. Therefore, it is high time to perform a study on CEO duality.

Regarding the cons of CEO duality, Bhuiyan et al. (2010) found that CEO duality exhibits a weak relationship with ROA and a negative correlation with total sales in New Zealand. According to Abels and Martteli (2011), the duality of the CEO and chairman deteriorates their performance. Their study mainly performed the analysis of the top 500 enterprises in the US, because all information is publicly available including revenue and the duality of top positions of a firm. According to their study, companies with CEO duality only maximize their interest and damage the interest of the shareholders. In addition, the agency cost is increased, and the confidence of shareholders and potential investors are weakened. CEO duality affects the long-term benefit of the company, because the CEO cannot monitor the board of directors.

Finally, CEO duality may lower corporate transparency and result in poorer corporate governance. Their study applied stewardship theory and agency theory to interpret the results. Their study only focused on the top 500 listed companies in the US, and the samples cannot represent the whole population, therefore, future studies may focus on other different categories of listed companies. Therefore, it is appropriate for this study to adopt the random sampling method.

Regarding the pros of CEO duality, Freihat et al. (2019) and Ujunwa (2012) identified a positive relationship between CEO duality and Tobin's Q in Amman and Nigeria respectively. In the study of Bhuiyan et al. (2010), New Zealand was regarded as a developed market, and Amman and Nigeria were taken as developing markets. Therefore, different markets may produce variant results. Ouyang (2013) emphasized that the existence of a lead director was positively related to firm performance. The lead director should be the most powerful member on the board like the person who acts as CEO and chairman. The character of lead director explains why CEO duality may have a positive impact on the firm financial performance. Nevertheless, CEO duality may have pros and cons for the company.

The research period is also a factor that may cause variance in the results. Rahman and Haniffa (2005) discovered a negative relationship between the CEO duality and firm financial performance. It is due to the problem of control if the same person acts as CEO and chairman of the company. Donald and Davis (1991) found a positive impact between CEO duality and firm financial performance, but Carter et al. (2003) identified a negative impact between CEO duality and firm financial performance. The last two studies investigated the relationship in the US stock market, but the results are different. One reason may be the changes of regulations that affect the

results of studies over a period. The other reason may be the changes of the expectations of shareholders on companies because of the changes of regulations and the changes from the business environment, especially after the 2008 financial tsunami. Another study on the relationship between CEO duality and firm financial performance was performed by Lam and Lee (2008) in Hong Kong more than 13 years ago, and their study was performed before the financial tsunami. Apparently, it is worth selecting CEO duality as one of the board characteristics for this study.

To sum up, CEO duality may not be good for the company according to previous studies. One problem is the monitoring and controlling issues because the same person acts in two powerful but contradictory positions in the company, because, for original settings, the CEO and chairman should monitor each other. The HKEX recommends that the positions of CEO and chairman should be taken by two different people, for it can enhance the monitoring function and the controlling function of the board.

2.4.4 Independent non-executive directors

Independent non-executive directors play an important role in a company; their major responsibility is to provide independent opinions to the board, especially on company strategies and policies. They need to enhance the creditability of the board for shareholders. According to the Hong Kong Institute of Directors, independent non-executive directors should play the role of watchdog for the shareholders and monitor the behavior of executive directors. One way of doing this is to investigate any relationship between the number of independent non-executive directors and firm financial performance. Chapter 5 of the Hong Kong listing rules provides guidelines about the characteristics of independent non-executive directors. According to Hong

Kong listing rules 5.08, the board should maintain at least three independent non-executive directors, and at least one of them should have appropriate professional qualifications or be an accounting or financial management expert. Furthermore, listed companies must appoint independent non-executive directors representing at least one-third of the board in order to enhance board independence and improve board performance.

2.4.4.1 Responsibilities of independent non-executive directors

Annuar and Abdul Rashid (2015) investigated the major responsibilities of independent non-executive directors, which are to oversee the effectiveness of board management, particularly in terms of decision-making. Compared with Annuar and Abdul Rashid (2015), Brennan and McDermott (2004) focused on the specific roles of independent non-executive directors on the audit committee. According to their study, independent non-executive directors are very important to the audit committee. They need to ensure that the company follows the regulation requirements, and they need to ensure the quality of auditing and transparency in terms of the accuracy of the financial information in annual reports. According to their study, independent non-executive directors play an agency role for shareholders and assist in ensuring the smooth operation of the board.

Annuar (2012) investigated the responsibilities of independent non-executive directors, which are to participate in strategy formation and evaluate the strategy. His study used a qualitative research method and conducted interviews with the management of targeted companies. In this case, the responsibilities of independent non-executive directors may also require ensuring the appropriate strategy formation process to improve firm financial performance. Independent non-executive directors

should prevent moral hazards and adverse selection of executive directors. The major responsibilities of independent non-executive directors are to protect the interests of shareholders and to assist the board in future development.

2.4.4.2 Positive relationship between independent non-executive directors and firm financial performance

Independent non-executive directors need to provide their opinions on corporate issues. Meyer and de Wet (2013) found a positive relationship between the percentage of independent non-executive directors and firm financial performance in the listed manufacturing companies in South Africa. A similar investigation can be performed on the Hong Kong stock market. Their study used the Tobin's Q as the firm financial indicator to measure the relationship. In this study, one of the firm financial indicators is the Tobin's Q, and it measures the market response towards the targeted companies.

2.4.4.3 Negative relationship between independent non-executive directors and firm financial performance

Klein (1998) identified a negative relationship between the percentage of independent non-executive directors and firm financial performance. According to his study, the number of executive directors is positively related to the ROA and stock returns. However, the role of independent non-executive directors may have negative effects only on ROA, because the length of meetings may increase and delayed strategy execution. The most important influence on firm financial performance may be on Tobin's Q of the company.

To sum up, the number of independent non-executive directors may have positive or negative impacts on the firm financial performance according to past studies as stated

in this section. The role of independent non-executive directors is to monitor the performance of the board and not to participate in the daily operation of the company. They should give their independent views on the board's decision-making process and provide more independent points of view on the board. However, one critical issue is how much time that independent non-executive directors can contribute to the board, because an independent non-executive directorship is not a full-time occupation. Especially, in Hong Kong, some people act as independent non-executive directors for several companies, and this practice caused the question of time allocation to manage corporate affairs. Accordingly, the HKEX intends to enhance the quality of independent non-executive directors in forthcoming future.

2.4.5 *Board meetings*

Board meetings are the occasions for the board members to gather to discuss issues of the company. Listed companies need to follow the listing rule requirements and convene at least four meetings every fiscal year. The meeting allows board members to discuss the company affairs and enhance the quality of decisions. Board members participate in the meeting and evaluate the strategies, documents, and reports. Detailed information about board meetings can be found in Appendix 17 of this study (page 301). By affecting the quality of decision-making, board meetings facilitate firm financial performance. Appendix 17 of this study extracted the information about the function of a board meeting from the annual report of one listed company in Hong Kong. Since board members manage the company on behalf of the shareholders, in board meetings, there is agency responsibility of the board members to the shareholders

Langford (2015) performed a comparison study on the fiduciary duty of directors in

Australia and the UK. It is a good study to compare these two developed countries. According to his study, the UK is better than Australia regarding the requirement of fiduciary duty of directors to the stakeholders. In the UK, there is very clear guidance on directors' fiduciary duty owed to different stakeholders, e.g., shareholders and creditors. In meetings, the board members can discuss the returns to shareholders and the liability to the creditors; hence they can manage their companies better and enhance book value of firms in the U.K, which results in good management of the interests of shareholders and creditors. Board members should act in good faith, with due diligence and care during board meetings.

For board meetings, another important issue is to review the recommendations of different committees, and it can achieve good corporate governance practice. The number of board meetings can increase the time to review the recommendations from different committees and make response to their recommendations or concerns. Different committees can facilitate the effectiveness and efficiency of board meetings and support the decision-making process of the company.

2.4.5.1 Three compulsory committees in Hong Kong listed companies

Under Hong Kong listing rules, different committees perform different functions, and these committees support the functions of the board meetings. Three committees must be set up within companies under Hong King listing rules; there are audit committee under Hong Kong listing rules C.3, nomination committee under Hong Kong listing rules A.5, and remuneration committee under Hong Kong listing rules 3.25.

Beasley et al. (2000) investigated the relationship between the number of audit committee meetings and the occurrence of financial statement fraud. According to

their study, more financial statement frauds happen if there is a small number of audit committee meetings. Hence the board delegates the power and authorities to the committees to ensure the effective operation of the company and handle some special issues during the committee meetings. Such meetings discuss different subject matters in different committees. Apart from different committees, the most important one is the board committee, and all members should participate in its meeting. Board meetings mainly focus on reviewing company's process, approving documents of the company, and making recommendations.

2.4.5.2 Past studies on the importance of the number of board meetings and firm financial performance

There are statutory requirements on the composition of different committees and their functions. The board meeting is important for maintaining the smooth operation of the company, and it is held in the fixed period.

Some past studies show a positive relationship between the frequency of board meetings and firm financial performance. In Hong Kong, the regulation requirements are found in the Hong Kong listing rules. According to Appendix 14 Code Provision A.1.1., board members should meet regularly to discuss company's issues and evaluate performance of the company. Because board members bear the responsibilities as the agent for shareholders, listed companies need to hold at least four board meetings in each calendar year. According to Section 344A of the Companies Ordinance, a company must hold an annual general meeting every financial year. The meeting should let all shareholders attend and discuss the company issues. Lawler et al. (2002) found a positive relationship between the frequency of board meetings and firm financial performance. According to their study, an increase

in board meetings can increase the quality of corporate governance as the board members have more time to discuss the company issues. It increases the interactive discussion for board members.

On the other hand, Jensen (1993) found that the number of board meetings has no relationship with the financial performance of a company, e.g., dividend policy and capital infusion from outside investors. According to his study, board effectiveness cannot increase if the board meeting time is too short, and the board members do not have sufficient time to discuss all the issues. Apart from insufficient time for board meetings, Hanh et al. (2018) and Rodriguez-Fernandez et al. (2014) discovered a negative relationship between the number of board meetings and the ROA. This negative relationship was due to other expenses incurred in board meetings, e.g., travel expenses and high energy cost of the board members to participate too many meetings. However, there may not be a major negative impact on firm financial performance.

In conclusion, there may be a positive or negative significant relationship between the number of board meetings and firm financial performance, and it depends on the length of board meetings. The time for board meetings should be sufficient for board members to fulfill their duties as agents to discuss all corporate issues and strategies. In Hong Kong, there is no study on the relationship between the number of board meetings and firm financial performance. This study tries to investigate the relationship between the number of board meetings and firm financial performance.

2.4.6 *Education level of board members*

Regarding the education level of the board member, it is known that the board and the

committees consist of members with different backgrounds. By using the audit committee as an example, Hong Kong listing rule 3.10(2) requires at least one member of the audit committee to be an independent non-executive director with an accounting or finance background. On the board and committees, every member contributes his/her expertise and knowledge to the company. They review company policies and strategies from different perspectives, e.g., the regulatory and technical feasibility aspects. The educational level of board members can affect the board's effectiveness and the firm financial performance, because education level is divided into academic and professional qualifications. Academic qualifications are the formal qualifications from a tertiary institute, e.g., bachelor's degree, master's degree, and doctorate degree. Professional qualifications are awarded by professional bodies, e.g., the professional accounting body, or engineering body. Bhagat et al. (2010) pointed out that directors with MBA degrees can perform better than those without MBA degrees. Education about management may affect the firm financial performance to a certain extent. Berent-Braun and Uhlaner (2012) used a questionnaire to collect data. According to their results, they found that the professionalism of the family members to be very critical to the success of a business and their professional skill is positively and significantly related to firm performance. They argued that the education of a CEO does not have any significant relationship with the financial performance of the company, because working experience of a CEO might be more important than his education. In addition, the latter does not imply the ability of the CEO. Similarly, it is difficult to quantify what the experience of the CEO is. Apart from education, one possible indicator may be the service length of the CEO or board members. A good board member should be preferably well-educated with a long period of time of service to the firm.

Board members with higher qualifications enable a company to obtain more diverse opinions from the board members to facilitate the board's financial performance according to the study by Cox and Blake (1991). Their study emphasized that higher qualifications improve the thinking process of the board through the exchange of constructive ideas inside the boardroom. Carver (2002) also found a similar result that board members with higher qualifications can facilitate firm financial performance. His study performed a more in-depth analysis of the reasons behind the relationship. Regarding board members with high qualifications, there is a mix of competencies and capabilities. According to his study, they can perform their duties more properly. But Adnan (2014) identified a negative relationship between the educational level of board members and firm financial performance in terms of ROA.

2.4.6.1 Social capital of board members with higher qualifications

Hilmer (1998) stressed that higher educated board members can enhance the board's effectiveness because higher qualification means the higher intellectual ability and efficient judgment of the strategies of the company. According to his study, higher qualifications can let the board members be more open-minded to the analysis of critical issues. Ingley and Van Der Walt (2001) stated that high qualification of board members can act as strategic resources of the company and connect different external resources including cooperation with other companies. Darmadi (2013) suggested that board members with Master of Business Administration ("MBA") degrees can enhance firm financial performance, especially those from prestigious universities. According to his study, the MBA degree of the board members can enrich the social capital and bring in more business opportunities. It can improve both ROA and Tobin's Q ratios. Compared with Darmadi's (2013) study, Kim (2005) expounded that board members with high qualifications can enhance the social capital of the company

and form a positive relationship with firm value in Korea. According to his study, high qualification of board members enables seeking more business opportunities through their elite school network. In this study, it examines whether any relationship between education of board members and firm financial performance.

2.4.6.2 Effective board management by board members with higher academic qualifications

A company can achieve better firm performance if its board members have high qualifications, because such board members can carry out their duties more properly. Ljungquist (2007), Milliken and Martins (1996) and Carpenter and Westphal (2001) argued that board members having higher qualifications can benefit firm financial performance because high competencies of board members facilitate the board's decision-making process and the selection of high return projects. They can have diverse points of view. After consolidating their results, this review can be concluded that board members with higher qualifications enhance the monitoring of the company strategy and in turn firm financial performance. They can improve the quality of decision and assist the company to achieve the targeted financial performance.

2.4.6.3 Effective board management by board members with professional qualifications

Board members with professional qualifications can provide their points of view on the company's policies and strategies. Haniffa and Cooke (2002) discovered a positive relationship between board members with accounting and finance qualifications and firm financial performance. According to their study, board members with accounting and finance qualifications can enhance the trust of investors and shareholders in the

board's credibility. Educational qualifications show a director's qualification and expertise that can affect the firm financial performance. According to resource dependence theory, the board members are the major resources of the company. They can provide long-term benefits to the company through their distinct characteristics, e.g., personal network and expertise. These distinct resources are rare and difficult to imitate by other people. They can assist the company to achieve a competitive advantage. In Hong Kong, past studies did not perform an analysis of the relationship between a director's qualifications and the firm financial performance.

2.5 Appropriate indicators to measure firm financial performance

To investigate which board characteristics affect the firm financial performance, it is necessary to use different firm financial indicators to evaluate the performance of the board. Regarding the nature of firm financial indicators, Capon et al. (1990) found that firm financial indicators focus on profit, growth, and reduced variability. According to their study, profit is due to the profitability and sales revenue of the company. The growth is the ROA, returns on equity, and market share. The reduced variability is due to the stable market value of the company.

Judita and Aurelija (2019) found both financial and non-financial indicators can be used to evaluate the firm performance. According to their study, one of the evaluation methods is the accounting data-based performance evaluation method, e.g., profitability of the company. The non-financial evaluation method can use the balanced scorecard to evaluate the firm performance. Rashid (2021) investigated the important criteria of the evaluation method that measure the efficiency of the company's assets. Samiloglu et al. (2017) found the evaluation of firm performance should consider from shareholders' point of view, such as profit and wealth

maximization. According to their study, ROA, price-to-earnings ratio, and earnings per share ratio are common methods to evaluate the firm performance. Al-Matari et al. (2014) suggested that the firm financial indicators should be consistent in different countries. According to their study, firm financial indicators can be used globally as the formula is the same in different countries, e.g., ROA and Tobin's Q. The non-financial indicators may be different in different countries, and they may be quite subjective, for example, the evaluation of the quality of management and leadership skills of board members.

According to Carter et al. (2010), there are two main streams of measurement methods of firm financial performance. They are the accounting measure and the market measure for the evaluation of firm financial performance. The accounting measure is the profitability of the company, and the market measure is the market value of the company. Both are historical data. Gentry and Shen (2010) also found that these two common methods to evaluate firm financial performance are accounting measures and market measures. According to their study, the accounting measure is short-term base, and it mainly measures the profitability and returns to shareholders, while the market measure mainly concerns the long-term returns to shareholders. Gentry and Shen (2010) stated that it is quite controversial which type of measure should be used to evaluate a firm's financial returns. But it may be better to evaluate the short- and long-term firm financial performance of a firm, because it can fulfil the needs of different stakeholder, e.g., shareholders and potential investors.

2.5.1 Using ROA and Tobin's Q as firm financial indicators

For accounting measure, it is the ROA, and such ratio is used to evaluate how efficiently the board of directors makes use of assets to generate the returns to the

shareholders. For market measures, most studies use Tobin's Q ratio for evaluation. Most studies obtain similar results regarding both accounting and market measures. Wolfe and Sauaia (2003) found that the more meaningful financial measurement is Tobin's Q. According to their study, Tobin's Q is the more appropriate method to compare the financial performance of companies. But Carter et al. (2010) found different results for accounting and market measures. There was a significantly positive relationship between both number of women on the board and the number of ethnic minorities on the board and ROA. But there was no relationship between gender diversity or ethnic minority diversity, either positive or negative with Tobin's Q. One possible explanation may be the different combination of board characteristics and firm financial performance that cause different results. Dr. Jin Xiaobin (Nov 2021) of HKCGI also stated the market value of listed companies to be one of the major firm financial indicators. Some researchers have adjusted to the financial measures. Ghosh (2006) adjusted the ROA, using the formula as an arithmetic average of the ROA. He found a positive relationship between board characteristics and the adjusted ROA.

Different board characteristics affect the firm financial performance. Muhammad and Durayya (2016) found that board independence and the presence of large shareholders positively relate to the financial performance of the companies. By examining the data of Fortune Global 500 firms from the year 2005 to the year 2012, the board size and frequency of board meetings were found to be negatively related to the financial performance of companies using the indicators of Tobin's Q, ROA, and stock return. This study chose to use the firm financial indicators as the evaluation benchmark as they can provide more objective standards as stated by Rajan and Reichelstein (2009).

2.5.2 *Using Z-Score as a firm financial indicator*

The Z-Score is a firm financial indicator that is used to evaluate the performance of a company. Shahwan (2015) claimed that Z-Score is a good indicator to measure the financial distress of a company. His study focuses on non-financial companies. According to his study, the financial distress of a company is the hot issue of corporate governance. The Z-Score can reflect how well the board manages the company. The bigger the Z-score of a company, the smaller the risk of financial distress. Byran (2004) found that the Z-Score can measure the financial wealth of a company, and it can reflect the capability of the board of directors to maintain the solvency of the company. His study proposed to use the Z-Score to complement the measurements of ROA and Tobin's Q. According to Dissanayke et al. (2017), the Z-Score has a negative relationship with CEO duality. A board with CEO duality takes higher risks than a board without CEO duality, which can reflect a higher opportunity of financial distress. From a corporate governance point of view, CEO duality may cause a high risk to the company, especially the risk of insolvency. The possible reason may be that CEO duality causes the company to select high-risk and overly aggressive projects thereby causing a large impact on the cash flow of the company. It is a very common situation that CEO duality dominate the board's decision-making process.

Al-absy et al. (2020) found that gender diversity has no statistically significant relationship with the Z-Score, and female directors do not guarantee to assist the company to achieve financial stability. Bernini et al. (2013) investigated what percentage of independent non-executive directors can have a positive influence on the Z-Score. Accordingly, they suggested that a board with more independent non-executive directors can enhance Z-Score and perform better risk management,

because independent non-executive directors should be more objective to give their opinions towards the company decisions.

2.5.3 *Other issues of using firm financial indicators*

To select appropriate firm financial indicators to evaluate firm performance, one needs to consider the truth and fairness of the indicators. According to Rajan and Reichelstein (2009), firm financial indicators can be used to determine the remuneration of the managerial staff, and they can reflect how well they manage the company, because all data from audited annual reports are reliable and assessable. Berghe and Levrau (2004) asserted that the most important issues to consider when evaluating a board are the board structure, a good culture, the right board members, and adequate directors' remuneration to obtain the best performance. But there is no information about how to evaluate the best performance. Unlike quantitative research, their study lacks a concrete measure to evaluate the performance of an effective board. This may also be the weakness of qualitative research methods as good firm performance is only in the opinion and perception of the interviewees without accurate evidential support.

To sum up, three firm financial indicators provide information on firm performance from different perspectives. ROA measures the returns of the company, Tobin's Q measures the market price of a company, and the Z-Score measures the financial wealth or solvency of a company. In particular, Z-Score considers the risks to the company in terms of insolvency, because many companies failed due to insolvency. A company may be profitable but insolvent. Vendors can wind up a company if it cannot settle its outstanding bills on time. The situation is similar to financial institutions, and they can wind up a company if it cannot settle loan principal and interest according to

the preset payback schedule.

2.6 The relationship between board characteristics and firm performance

The role of the board of directors is to enhance corporate value and manage the company on behalf of the shareholders. There is an agency and principal relationship between the board and shareholders (Fama & Jensen, 1983). The board of directors plays the role of agency for the shareholders. The shareholders play the role of principal. The primary responsibility of the board is to achieve returns for the shareholders.

2.6.1 *Responsibilities of the board to firm performance*

The primary responsibility of the board is to achieve the best performance for the shareholders. Finkelstein et al. (2009) stated that the board of directors must know their roles in firm management and know the extent of the board's power. In this case, they can exert their power properly and act in the best interest of the shareholders. Davies et al. (2002) stated that the board of directors can lead the board regarding corporate strategy, monitor the CEO and then enhance the firm financial and non-financial performance. They need to act in the best interest of the shareholders and guide the managerial staff. The board of directors needs to sharpen the corporate strategy to achieve the best firm financial performance.

Zhu et al. (2016) used a questionnaire to collect the points of view of 2,351 directors in Canada. They found the board of directors in both profit-making and non-profit-making companies. According to their study, an effective board needs to achieve good board processes and board strategy direction as well as enhance

organizational performance. There is no difference between profit and non-profit making organizations.

2.6.2 *The monitoring role of the board of directors*

The other important role of the board is monitoring the performance of senior management in the company. Senior management may not be board members, but their decisions can affect the company significantly.

Regarding the managerial roles of the board of directors, Drymiotes (2008) stated that the board of directors can monitor the performance of the management of companies. It needs to ensure that the manager does not shirk his duties and improve the quality of earnings. The board of directors plays a stewardship role on the board. They can provide clear guidance to the manager and ensure the long-term benefit of the company. Compared with Drymiotes (2008), Gavin and Cameron (2010) clearly stated that directors focus on five major areas. According to their study, these five major areas are risk and compliance, governance of the company, strategy in financial and non-financial terms, management development, stakeholder management and maintaining the effective operations of the company. Good strategy and corporate governance can enhance firm value and then improve firm financial performance.

2.6.3 *Major criteria to evaluate the board characteristics and firm performance*

Some researchers have tried to identify how to evaluate firm performance. Furthermore, they have also tried to study how directors should properly perform their duties. Steen (2004) stated that the board of directors can assist in separate ownership and control. Good corporate governance can achieve high corporate value. According to Institute of Chartered Accountants of England and Wales, the good corporate

governance is that the board can balance the interest of all stakeholders, such as shareholders, suppliers and public. Corporate value can be measurable and non-measurable. Measurable corporate value is the financial performance of the company, and it is the monetary returns to the shareholders. The monetary benefit can be divided into capital gain and dividend payment to shareholders. Non-measurable corporate value is the social goods, such as protection of environment.

Brennan and Thakor (1990) found firm financial returns to be the preference of shareholders. According to their study, firm financial returns can be dividend pay-outs and capital gain. Dividends are the most preferred by shareholders. Capital gain is the gain in value due to increasing share prices. Daily et al. (2003) stated that corporate governance is about the board using resources to resolve the conflicts between different stakeholders. The company can maximize its corporate value and then achieve the best performance. A definition of best performance is lacking. Different stakeholders may have different points of view. But one concrete and objective measurement may be firm financial performance.

Black et al. (2006) stated that board composition can predict the corporate value in Korea. According to their study, good board composition can ensure good corporate governance practice. It can improve firm performance in both financial and non-financial aspects. To evaluate board performance, it may be better to use some objective criteria, such as financial performance. Similar to other past studies, Black (2001) stated that a company with better corporate governance can enhance its corporate value. The company can make a higher profit for investors. From past studies, firm performance is divided into financial and non-financial. Financial performance is measurable. Non-financial performance is not easy to measure. There

is a lack of objective measures to evaluate performance, such as environmental protection.

Besides, Bachiller et al. (2014) stated that firm financial performance depends on the skills and capacity of the directors in both family-owned and non-family-owned businesses. So experienced and skilful directors can assist the company to achieve better performance. The competent directors assist the company to choose good decisions and maximizing the benefit for the shareholders. Furthermore, it can reduce the risk exposure of the choice. The board of directors needs to perform risk analysis for all projects. The objective measurement is firm financial performance.

2.6.4 Shareholders' expectations towards the board

The primary goal of the shareholders is capital gain and dividend payment. Regarding capital gain, the shareholders want the value of the stock they hold to increase. Regarding dividend payment, the shareholders expect consistent dividend distribution by the company so they can obtain recurring income from the company. Both capital gain and dividend distribution depend on the firm financial performance. In this case, the quality of the board and the board characteristics affect the firm financial performance. The provision of guidance to the board is needed to protect the interests of the shareholders. There is a lot of guidance under the Hong Kong listing rules, Companies Ordinance, and regulations of the SFC.

Another role is risk management. The board of directors should make less risky decisions and policies to maximize shareholder benefits because different people have different intentions to accept risk. The board of directors must assess the risks of projects carefully. They need to strike a balance between risk and returns. The role of

the board needs to assess risks to minimize the loss and improve the firm financial performance. The recent amendment of accounting standards requires companies to enhance transparency in the areas of environmental, social and governance according to Hong Kong listing rules and this is a detailed requirement in Appendix 27 of the Hong Kong listing rules. One critical area is the disclosure of risk management.

2.6.5 *Other board characteristics which affect firm performance*

Apart from the previously mentioned board characteristics, some board characteristics can also be evaluated. For example, there seems to be a little study on the impact of the age of directors. Horváth and Spirollari (2012) found a significantly positive relationship between the age of directors and firm performance. Besides, Johl et al. (2015) stated that there was a significantly positive relationship between accounting experts on the board and firm performance. According to their study, due to the accounting background of directors, they might be more sensitive to firm performance. They can know any change in accounting practice and have better oversight of board performance. Their study has further concluded that the large board size has a positive relationship with firm performance.

In past studies, scholars stated that the role of the board is to manage companies and often consider that good composition of the board is very important. An objective standard is needed to measure the effectiveness of the board. One of such standards may be firm financial performance.

2.6.6 Effect of board characteristics on the non-financial performance of companies

Most studies focus on firm financial performance and a few focus on non-financial performance. To measure non-financial performance, one possible indicator may be the amount of charitable donations. Coffey and Wang (1998) stated that board diversity includes age, education, gender and working experience. It can affect the non-financial performance of a firm, such as charity donation. Corporate social responsibility may not only measure the amount of charitable donation.

2.7 Firm size

Firm size may have an impact on firm financial performance. Firm size is measured by the total assets of the company. Smyth et al. (1975) found that the measurement methods of firm size between the United States and the UK are similar. In the United States, the firm size measures are total assets, sales, employment and invested capital. In the UK, the firm size measures are net assets, capital employed, sales, employment, and market value. The measurement method is similar in the US and the UK.

Anis et al. (2017) found a positive relationship between firm financial performance and firm size. A large firm size can achieve better firm financial performance. It is the same conclusion as for the ROA and Tobin's Q as firm financial indicators. Erol (2011) discovered that firm size affects the capital structure of a company and then affects the firm financial performance. According to his study, the large firm size can have a positive impact on firm financial performance because a large firm can provide more equity capital. For small firms, the capital structure may involve a large amount of debt, and the firm needs to take higher risks. Furthermore, the firm also needs to bear higher amounts of interest for the debt.

Compared with the studies of Anis et al. (2017) and Erol (2011), Pervan (2012) found a positive relationship between firm size and the financial performance of the company. There was only a very weak relationship, and the firm financial performance may be affected by other factors, such as the strategy and the management effectiveness. Dogan (2013) also found a positive relationship between firm size and ROA. In his study, firm assets are represented by the total assets of the company. He suggested different methods to evaluate the firm size, such as total sales and number of employees. Compared with Dogan (2013), Ghafoorifard et al. (2014) used Tobin's Q as the firm financial indicator. They also found a positive relationship between firm size and Tobin's Q. From the study by Dogan (2013) and Ghafoorifard et al. (2014), firm size can have a positive impact on the ROA and Tobin's Q. Compared with Dogan (2013) and Ghafoorifard et al. (2014), Abeyrathna and Priyadarshana (2019) identified no significant relationship between firm size and ROA. This may be due to their study focusing on the manufacturing industry. Thus, different industries may have different results.

Orser et al. (2000) focused their study on small firm size and firm financial performance. According to their study, a small company's development and financial performance may be hindered because the company may lack resources in different aspects. Apart from financial capital, it may also lack talents which will affect the operation of the company. In this study, firm size is a control variable.

2.8 Types of company

In Hong Kong, listed companies are classified into two major types. In this study, if the principal place of business of a company in Hong Kong and the business operation focuses on Hong Kong, it is called a Hong Kong-based company. For other types of

companies, if the principal place of business in Hong Kong and the business operation focuses on Mainland China, it is called “Hong Kong and Mainland China”-based company in this study. The two types of companies may have different characteristics regarding board management. Different countries’ listed companies have different cultures, business environments and regulations which may affect the board characteristics and in turn firm financial performance.

2.8.1 Current situations of the types of the company listed in Hong Kong

Recently, there are many “Hong Kong and Mainland China”-based companies seeking IPO on the Hong Kong stock market. “Hong Kong and Mainland China”-based companies are divided into three categories. The first one is state-owned enterprises, and the companies are wholly owned by the Chinese government. The second one is private enterprises, but the shares are partly owned by the government. The government can still monitor the performance of the enterprises. The third one is private enterprises which are wholly owned by an individual or private fund. Mainland China enterprises under government control may not collapse easily because China’s government uses them as a tool to obtain social stability, for example, for reducing the unemployment rate. The high-risk area is privately-owned Mainland China enterprises, because accounting frauds may occur in some of these companies, e.g., overstating profit figures to fulfil IPO requirements of Hong Kong. IPO fraud cases will weaken the reputation of Hong Kong as an international market. According to the Heda Bayron report (2011), a recent example is China Forestry Holdings Limited which was partly owned by a US private equity fund. The company launched an IPO in December 2009 and suspended trade in December 2010. It is a traditional case of the board colluding with auditors to overstate the profit figures to fulfil the listing requirements. The SFC discovered irregularities in the accounting

report in the IPO prospectus. It is quite common for those fraudulent companies to record a large amount of loss after the first year of IPO. Then the share price of the companies will drop dramatically. The final victims may be the shareholders as they cannot receive any dividend and even lose all their investments. At worst, suspension of trade for a long time will be imposed on such companies or even delisting from the HKEX. Some “Hong Kong and Mainland China-based” companies use accounting policies to manipulate the profits to meet the profitability requirement for IPOs in Hong Kong. But they cannot maintain their profit after listing. In the past, there are very few studies about the relationship between the type of company and the financial performance of the company.

2.8.2 *Board characteristics in different types of companies*

In Mainland China, the controversial issue is the principal-to-principal conflicts (Young et al., 2008). This means the conflicts between the majority shareholders and minority shareholders. Dharwadkar et al. (2000) stated that the principal and agent relationship is not very important in emerging markets. The major problem is that the board is dominated by a few majority shareholders, and there is less protection for minority shareholders. The board of directors needs to serve two principals, and the board of directors needs to reconcile the interests of the majority and minority shareholders. Young et al. (2008) addressed that there are majority shareholders and minority shareholders in Mainland China enterprises, and in some situations, these two types of shareholders may have a conflict of interests. The board of directors needs to resolve such conflicts, and it is subject to the independence of the board as the major shareholders dominate the board.

For the protection of minority interest shareholders, Hu et al. (2010) provide an analysis of the cause of the board independence problem in Mainland China. Regarding the major cause of the independence problem of Mainland China-based companies, they pointed out that ownership concentration is a critical corporate governance issue in Mainland China. Through the analysis of three years of data from 304 listed companies from 2003 to 2005, they investigated the high concentration of share ownership among a few shareholders. This kind of ownership can weaken the corporate governance of the company and affect the firm financial performance in Mainland China. This situation mainly happens in privately owned enterprises. For state-owned companies and those partly held by the government, such governance issue is rarer than in privately owned enterprises. One main reason is the concentration of ownership among a few shareholders which affects the board's independence. The major shareholders can dominate the board and hinder the monitoring role of the supervisory board in Mainland China. To sum up, the concentration of ownership of the controlling shareholders has a negative impact on the firm financial performance. In developed countries, such an issue may not be so significant, but it is very significant in emerging markets. The other reason for less independence of the board is the weakness of the power of the supervisory board.

Tam and Hu (2006) stated that the function of the supervisory board is useless, and it cannot monitor the board's performance. One reason is that the supervisory board is less independent from the company and controlling shareholders. The board cannot act as the watchdog of board performance. The major issue is that the ownership concentration by the major shareholders also controls the directors of the board. Then they can control most of the decisions of the board. The board independence of such companies is a critical issue, and it may not be good for the long-term development of

the company and seriously affect the firm financial performance. From past studies, the principal-to-principal issue and board independence issue may be the two main issues in emerging markets.

To sum up, different types of companies may have different impacts on the firm financial performance. This may be due to the specific board characteristics of different types of companies. In the past, many studies only focused on one country. In Hong Kong, the situation may be different as listed companies worldwide seek to raise funds in the stock market of Hong Kong. Nowadays, there are two main types of companies, i.e., Hong Kong-based and “Hong Kong and Mainland China”-based companies. The company type is the control variable in this study.

2.9 Chapter summary

This chapter explores the importance of board characteristics for firm financial performance. Many studies cover the impact of certain characteristics of the board on firm performance including family involvement, gender diversity, CEO duality, percentage of independent non-executive directors, number of board meetings, and the education level of board members. This chapter reviews several issues. Firstly, it reviewed the corporate governance role of the board of directors in the strategy-making of listed companies. Past studies described the role of directors in the managerial staff of the company and the firm financial performance. Secondly, it reviewed several theories to interpret the effect of board characteristics on firm financial performance. As stated by Donaldson and Davis (1991), ROA, return on equity, and Tobin's Q ratio are often used to study the relationship between board characteristics and firm financial performance. They stated that good financial performance reflects the good stewardship role of the board. ROA, Tobin's Q, and

Z-Score are commonly used to study the relationship between board characteristics and firm financial performance. Thirdly, it reviewed different board characteristics, i.e., family involvement, gender diversity, CEO duality, independent non-executive directors, board meetings, and education of board members. Fourthly, it reviewed the options of the firm financial indicators, and it provided information about the selection of the appropriate firm financial indicators in this study. Finally, it reviewed the effect of board characteristics on firm financial performance, because many board characteristics affect the firm financial performance. This section investigated how different board characteristics affect the firm financial performance to different extents. Apart from quantitative studies, it also reviewed qualitative studies on this topic.

This literature review section has shown that several board characteristics affect firm performance, and it also demonstrated that different scholars may find different results concerning board characteristics and firm financial performance. This review discovered that there is little qualitative research on this topic, and this may be attributed to that qualitative research may not be able to collect opinions or advice of the interviewees on financial performance of companies. For firm financial performance, it is better to use objective measures, i.e., data from published reports. This review also discovered that the majority of the previous studies focused on quantitative research methods on this topic. Therefore, this study adopted a quantitative research method to study the relationship between board characteristics and firm financial performance.

Chapter 3. Conceptual framework

This chapter provides the conceptual framework of this study. After reviewing a certain number of journals, this study constructed the research framework of this study. This study investigates the relationship between board characteristics and firm financial performance.

3.1 Introduction

In this chapter, it provides the information about the construction of this study. After performing the literature reviews, it can provide the information about the selection of the board characteristics, the firm financial indicators, and the theories for this study. It can construct the conceptual framework in this chapter. The conceptual framework illustrated the relationships between the four types of variables, i.e., dependent variables, independent variables, moderating variable, and control variables. Three dependent variables are ROA, Tobin's Q, and Z-Score, because this study expects to provide a full picture of the influence of board characteristics on different financial aspects. Two major financial indicators are used to measure profitability and the market value respectively; specifically, ROA is used to measure profitability, and Tobin's Q is used to evaluate market value of a company. While Z-Score is used to evaluate liquidity or the level of risk of bankruptcy.

Regarding independent variables, this study mainly investigates the board's composition. Regarding composition, the independent variables are the percentage of family directors, gender diversity, CEO duality, percentage of independent non-executive directors, number of board meetings, and education level of board members. The selection of these independent variables mainly focuses on the past studies and the research gap in this study. Family control and gender diversity are two

major concerns of this study. Apart from these two independent variables, the number of independent non-executive directors is also very important issue to investigate in this study, because they can improve the firm's decision-making process and can reflect the firm financial performance. For CEO duality, the major concern is that the same person acts as the CEO and chairman at the same time. The number of board meetings may influence the firm financial performance. For the education level of the board members, it can reflect whether the board to appoint more higher education level board members to facilitate the quality of decision-making process. Board size is the moderating variable, and it is expected to influence the relationship between the dependent variables and independent variables in this study. For the board size, it may exert influence on the independent variables and the dependent variables. The increase in board size may increase the appointment of different types and characteristics of the board members to the boardroom. It may cause different influences on different firm financial indicators. Firm size and company type are control variables, and they were assumed no significant influence. A larger firm size may consider more resources for the development of the company, and it may not be the case for a start-up business. Additionally, all types of companies must follow Hong Kong listing rules and accounting standards of Hong Kong to report the financial results, which should give a true and fair view. The investigation assumed that firm size has no influence, and it also assumed that company type has no influence in this study.

3.2 Theoretical foundation

As illustrated by the conceptual framework below, this study focuses on the evaluation of the impacts of board characteristics on financial performance. By referring to the table of past studies, it was found that ROA, Tobin's Q, and Z-Score are three common firm financial indicators (Altman, 1968) to examine the relationship between board characteristics and firm performance.

The conceptual framework of this study is as follows:

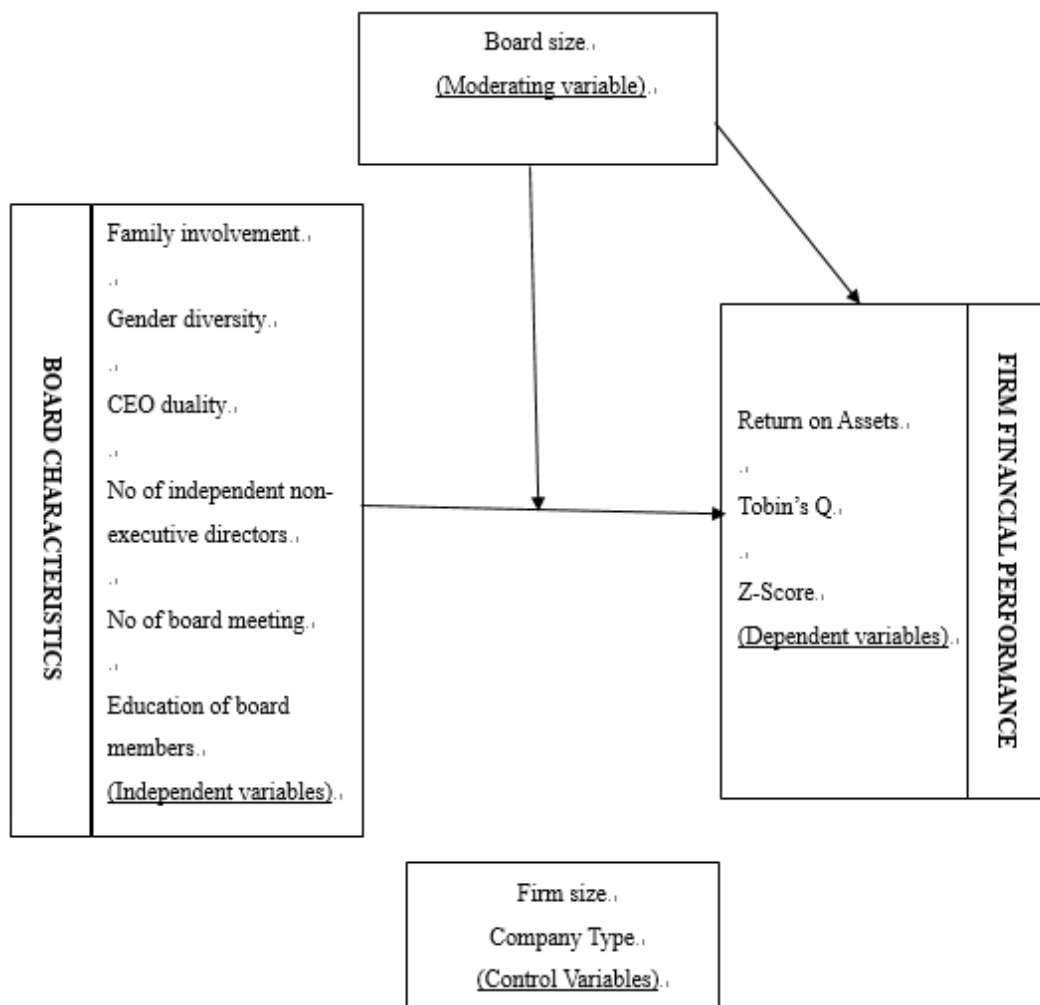


Figure 3: Conceptual framework of this study

Figure 3 presents the conceptual framework of this study, which investigated not only the impact between independent variables and dependent variables. It shows that the

independent variables are family involvement, gender diversity, CEO duality, percentage of independent non-executive directors, number of board meetings, and education of the board members. In addition, this study involves a moderating variable and control variables, where the moderating variable is the board size of the company, and the firm size and company type are the control variables. The board size can cause moderating effect to the dependent and independent variables. Erhardt et al. (2003) stated that a large board size can provide more opportunities for females to be appointed as directors. This study evaluates different characteristics of the board to fill in the research gaps, e.g., the effect of gender diversity and number of independent non-executive directors on firm financial performance.

This study applied agency theory, stewardship theory, and resource dependence theory to interpret the results. For agency theory, it states the relationship between the board and the shareholder. For modern business, the ownership and the management of a company are separated, but a principal and agent relationship exist. The board is the agent, and the shareholder is the principal. The agent should act in the best interest of the principal and prevent any conflict of interests. Bathala and Rao (1995) stated that the agency theory emphasizes the significant role of directors in the organizational and governance structure. According to their study, the role of directors is to manage the risk of the investments and maximize the wealth of the shareholders. The financial performance can reflect the efficiency of the board. Ben Ali (2014) stated that agency theory is very important in the corporate governance area to identify the responsibility of the board towards the shareholders. There exist the relationships between the board characteristics and firm financial indicators, and these relationships reflect the efficiency of the usage of resources to generate returns to shareholders and maximize the wealth of shareholders. This effect is reflected in

ROA. Apart from the returns, the shareholders may also be concerned about any over-aggressive behaviour of the board, this effect is reflected in Z-Score.

Stewardship theory is applied to interpret the board's accountability towards the decision-making power inside the board. Keay (2016) asserted that stewardship is very useful to explain the responsibility of board members, i.e., good steward skills and trust inside the board. Stewardship theory focuses on the internal management of the company. Board members need to understand thoroughly the business operation to make a good decision. The firm financial indicators, e.g., ROA and Z-Score reflect how well the management of the board is, and they are the benchmarks to decide a high return project and to prevent over-investments. Tobin's Q measures the market value of a company, and it reflects the perception of the investors towards the board members or the board characteristics, e.g., family involvement and board independence.

From resource dependence theory, the sustainable development and survival of the companies rely on the ability of the board to manage the resources, including the characteristics and professional skills of the directors and the capacity to obtain necessary resources from the surrounding environment according to Pfeffer (1972) and Hilman et al. (2000). It shows one of the important characteristics of board members that members can bring their professional knowledge to the board, especially from the external environment. Tobin's Q reflects the market recognition of the new appointment of board members as the market may expect that the new appointed directors can bring more human and financial capital to the company. This recognition can be reflected in share price of the listed companies, and it is the investors' attitude towards the board of directors.

Nicholson and Kiel (2007) studied the usage of these three theories, i.e., agency theory, stewardship theory, and resource dependence theory. According to their study, one cannot be sufficient to only use one theory to interpret board performance.

Agency theory and stewardship theory are opposite in some cases, but they are often used together to interpret performance. First, agency theory is the relationship between the shareholders and the board of directors. Stewardship theory is the relationship between the steward (managerial staff of the company) and the board of directors. Second, the expectation is different between the two relationships. Shareholders expect to obtain returns from their investments in terms of dividends and capital gains. The managerial staffs of the company expect the board of directors to lead the company in long-term development. Third, the expectation of the two theories may have some differences. Shareholders may expect short-term monetary benefit, and management of the company may expect long-term development because their monetary benefit is fixed under an employment contract. The management of the company expects to retain a certain amount of earnings for development rather than dividend distribution. Their study used the case study approach to examine the three major corporate governance theories, i.e., agency theory, stewardship theory, and resource dependence theory. The case study used semi-structured interviews with the targeted directors of the listed companies. Their results show that only two cases followed the predicted agency theory pattern among the total of seven cases, and the board has a monitoring process to ensure the control of the board. One of the cases was dominated by one director who could not follow the agency theory. Another case followed the stewardship pattern and obtained efficient information for the decision-making. Although board of directors can make decisions based on their professional judgment, the study only evaluates the board process. It lacks

information about how to determine the effectiveness of the board in terms of performance. The study of Nicholson and Kiel (2007) shows the process of the three theories as follows:

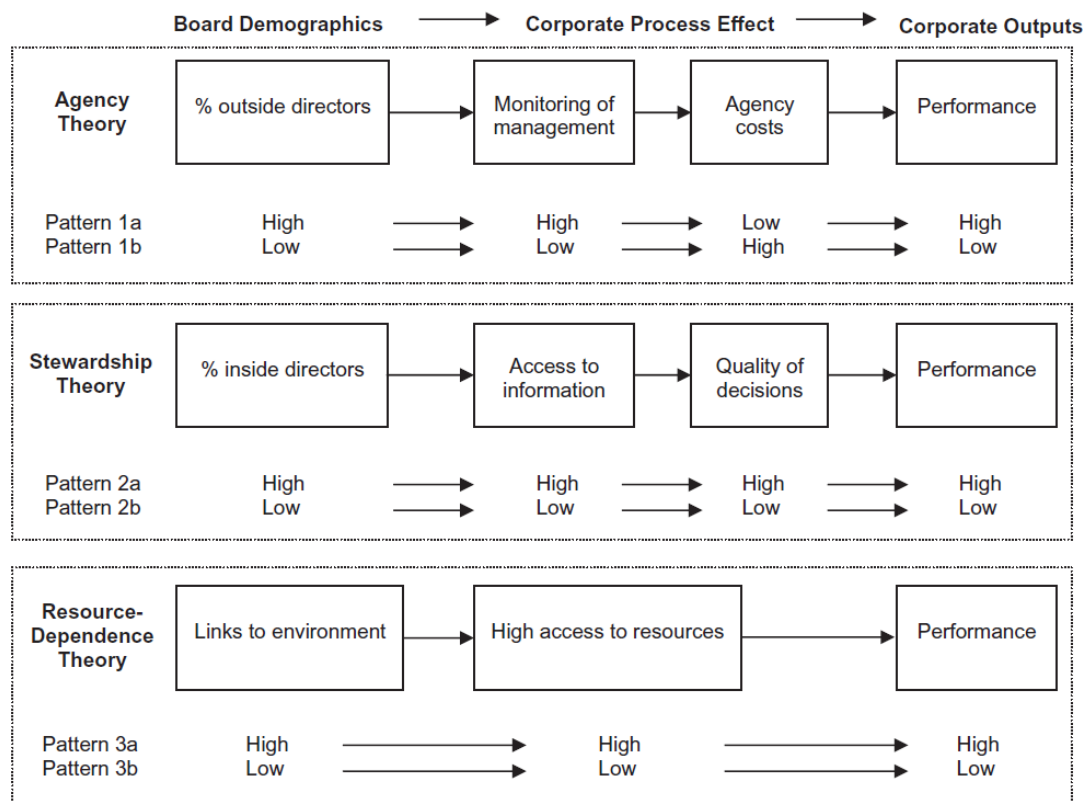


Figure 4: Board process predicted by the three theories (Extracted from Nicholson and Kiel (2007)).

Figure 4 shows the linkage of the three theories between board characteristics and firm performance. The critical point is how to evaluate corporate performance. Dharmadasa et al. (2014) used agency and stewardship theories to interpret the relationship between board characteristics and firm financial performance. According to their study, agency theory identifies the agency relationship where one party is the principal and delegates work to another party as the agent. Under stewardship theory, directors are regarded as stewards of the company's resources and should be predisposed to act in the best interests of the shareholders. This study used the agency

theory to explain the responsibility of the board to shareholders in terms of achieving good performance.

Apart from agency theory, stewardship theory was applied to interpret the responsibility to guide to achieve good performance. The agency theory and stewardship theory interpret how effective board management is, and these theories explain the responsibilities of the board members for firm financial performance. Agency theory explains the relationship between the board and the shareholders. Stewardship theory explains the internal management of the board and that a chairman should lead the board to achieve the best decision for the shareholders. Resource dependence theory shows what resources the board of directors can bring to the company. All three theories can be applied in this study to explain the effect of board characteristics on firm financial performance (Reguera-Aalvarado et al., 2017).

The agency theory and stewardship theory explain the behavior of the board. The differences between agency theory and stewardship theory are that the agency theory focuses on extrinsic satisfaction which is measured from the market value, and stewardship theory considers how the structure of the board affects firm performance (Vo and Nguyen, 2014). Under the agency theory, benefits of the management and the shareholders are inconsistent (Zahra and Pearce, 1989). Resource dependence theory explains how board members assist the company to link up the external resources and to improve firm financial performance.

3.3 Research hypotheses

The literature review section shows how family involvements affect the independence of the board. Under the agency theory, family involvement causes an agency problem.

This is because that family can control the decisions of the board if the family owns the controlling interest. The agency problem may become more serious if the family member is appointed as a board member because the corresponding family member acts as the agent and principal at the same time. In this case, it is very easy to cause a conflict of interests. Another issue is CEO duality, which may affect the firm financial performance because if the same person acts as the CEO and chairman of the company. This practice dominates the board's decision-making process and easily ignores the interests of minority shareholders; however, CEO duality may nullify this assumption. The HKEX encourages that the positions of CEO and chairman should be taken by two different persons.

Gender diversity is a hot issue in corporate governance area. Bonn (2004) and Erhardt, Werbel and Shrader (2003) found a positive relationship between gender diversity and firm performance because gender diversity provides more diversified opinions to the board and improve the board's decision-making under the stewardship theory. Noland and Kotschwar (2016) also found that gender diversity can cause a positive impact on the firm financial performance. Another issue is the role of independent non-executive directors inside the boardroom.

This study examined three firm financial indicators with three models. There are three sub-hypotheses for each model. All these sub-hypotheses assumed to be the same direction of results as hypothesised. The assumptions are similar with that of the past studies on the similar topics conducted by Norliana et al. (2018) and Akbar et al. (2017). In both studies, they used the ROA, Tobin's Q, and Z-Score to evaluate the relationships between the board characteristics and the firm financial performance. Atty et al. (2018) and Kalsie and Shrivastav (2016) also performed similar studies to

evaluate the impacts of different board characteristics on firm financial performance. Both studies used ROA, Tobin's Q, and return on equity as the firm financial indicators. There were also three sub-hypotheses for each model and all of them assumed in the same direction of results in the studies by Atty et al. (2018) and Kalsie and Shrivastav (2016). Based on the literature reviews about the impacts of each board characteristic on different firm financial indicators, there may be different results. It is because all three firm financial indicators reflect the financial situation of the company. For ROA, it reflects the returns of the company. For Tobin's Q, it reflects the market value of the company. For Z-Score, it reflects the insolvency of the company. The same board characteristic can be positive, negative, or even no impact on different firm financial indicators. Based on the analysis of past research studies, all sub-hypotheses of three models assume in the same direction of results. In fact, there are only assumptions of all sub-hypotheses. It is because this study expects to identify the board characteristics which can cause positive influence on the firm financial indicators. So it can provide recommendations about the board structure which can enhance the firm financial performance. Besides, it can also facilitate the comparisons of the three firm financial indicators towards the same hypothesis.

Relationship between family involvement and firm financial performance

The research findings of past studies are quite diversified. Bachiller et al. (2014) and Alabdullah (2017) found a positive relationship between a board with more family members and firm financial performance due to the higher managerial ownership structure motivating firm financial performance. They have a higher intention to work hard to gain high rewards, such as dividend distribution. Under agency theory, there is a principal and agent relationship between the family members and firm financial performance. Cho and Kim (2007) stated that there is a positive significant

relationship between a large block shareholding and firm performance in Korea. Darmadi (2011) presented evidence that family-owned businesses outperform non-family-owned businesses. The major reason is the speedy decision-making capability of a family-owned business as it can achieve better firm financial performance. However, O' Boyle et al. (2011) found that there is no relationship between family involvement and firm financial performance. According to their study, there is no difference between family-owned and non-family-owned companies in the firm financial performance. Their study was conducted in the US, the family-owned business is very common in Asia countries or markets, e.g., Hong Kong. The situation of family controlled may be different with that in the US.

Zona (2016) pointed out that CEOs of non-family-owned business have better performance than family-owned business CEOs in a large organization. But CEOs of family-owned business outperform CEOs of non-family-owned business under a more poorly performing board. However, Essen et al. (2012) found no relationship between family involvement and firm financial performance. In addition, Anderson et al. (2011) stated that there is an adverse relationship between family-owned companies and firm financial performance. The major reason is the conservative and risk-averse behavior of the board of directors, because they are unwilling to put money into a risky business. In this case, it is very difficult to obtain a better return for the shareholders, which is a problem for family-owned companies, however it may not be the case for different countries.

One critical point is that family involvement affects the independence of the board. In the literature review section, it was stated that family involvement was very common in listed companies. Under stewardship theory, the board of directors should lead the

company effectively. This may be reflected by the firm financial performance. Brickley et al. (1988) stated that family directors have an incentive to monitor the performance of the board and achieve good financial performance. As most of the companies in Hong Kong are family owned, family directors may try their best to achieve the best performance under agency theory as well as stewardship theory.

Hypothesis 1a (H1a): *There is a positive relationship between family involvement and ROA.*

Hypothesis 1b (H1b): *There is a positive relationship between family involvement and Tobin's Q.*

Hypothesis 1c (H1c): *There is a positive relationship between family involvement and Z-Score.*

Relationship between gender diversity and firm financial performance

The gender diversity of the board is another controversial topic in corporate governance. Previously, the board members were mainly male and only a few females could be appointed as board members. Gender diversity is mainly due to how many female directors are in the boardroom. Rossi et al. (2017) stated that women do better in the listed companies in Italy. According to the results, the firms do better if the board contains more female directors. There is a positive significant relationship between the number of females on the board of directors and firm performance. The females' role in management is traditionally undervalued. Females can provide a different point of view on strategy formation and leadership. In Italy, more than 30% of board members are female which is fourth place in Europe.

Bonn (2004) stated that there is a positive relationship between the number of female directors on the board and firm financial performance. But the study does not provide

any reasons for such impact. Reguera-Aalvarado et al. (2017) stated that female directors have a positive relationship with firm performance after performing a quantitative study on the firm financial performance of targeted companies. The study of Acker (1990) provided a reason for such impact. He found that gender diversity can improve efficiency in the decision-making process. The company can diversify the leadership behavior and make it a good practice to strike a balance of the power between males and females. The role of women at the managerial level cannot be ignored nowadays. Besides, the HKEX proposes to require listed companies to provide the reason that there are no female board members on the board. It is high time to study this topic in Hong Kong. Smith et al. (2006) found that women on the board of directors can cause a positive significant relationship with firm performance. Unlike other similar studies, their study links up the education level of female CEOs or directors.

Gender diversity can also facilitate the strategic decision-making process. Carter et al. (2003) also stated that gender diversity can enhance the firm financial performance. According to their study, female directors are more inclined to ask questions than male directors on the board. Under agency theory, female directors use their power more properly to protect the rights of shareholders and then achieve the financial growth of the company. Under resource dependence theory, different board members can bring different competencies to the company.

Hypothesis 2a (H2a): *There is a positive relationship between gender diversity of the board and ROA.*

Hypothesis 2b (H2b): *There is a positive relationship between gender diversity of the board and Tobin's Q.*

***Hypothesis 2c (H2c):** There is a positive relationship between gender diversity of the board and Z-Score.*

Relationship between CEO duality and firm financial performance

Originally, the cross-monitoring function exists if a separate person acts as CEO and chairman. Many past studies investigated such issues, and the findings are quite different. Vo and Nguyen (2014) found that CEO duality has a positive correlation with firm performance as measured by ROA. Carter et al. (2003) found CEO duality to have a negative correlation with a firm performance by using Tobin's Q ratio. In the studies of Vo and Nguyen (2014) and Carter et al. (2003), the results are quite different.

Finkelstein and D'Aveni (1994) emphasized that CEO duality can provide good leadership and facilitate the decision-making process. The board can obtain the advantage of unity of command as the same person acts as the CEO and chairman. Furthermore, the CEO can build a strong position on the board through CEO duality. It can prevent the time to reach compromise in the decision-making process if different people act as CEO and chairman separately. But their study also stated that it depends on the industry type and CEO duality may not be good for all industries. But some researchers argue that CEO duality is not good for the company. Finkelstein and D'Aveni (1994) focused on ROA to evaluate financial performance. The study of Coles and Hesterly (2000) used stock return as the firm financial indicator and discovered that CEO duality enables only weak cross-monitoring of CEO and chairman. According to their study, the same person can dominate the board. The conclusion is quite diverse, and it may be difficult to draw a clear conclusion about whether CEO duality is good or bad. The study of Finkelstein and D'Aveni (1994)

mainly evaluated the actual accounting performance of the company. The study of Coles and Hesterly (2000) mainly evaluated the market reaction to CEO duality. The result of ROA and Tobin's Q may be quite different. The firm with CEO duality and the firm without CEO duality may cause a different impact on firm financial indicators, i.e., ROA, Tobin's Q, and Z-Score.

Hypothesis 3a (H3a): *There is a different impact of CEO duality and without CEO duality on ROA.*

Hypothesis 3b (H3b): *There is a different impact of CEO duality and without CEO duality on Tobin's Q.*

Hypothesis 3c (H3c): *There is a different impact of CEO duality and without CEO duality on Z-Score.*

Relationship between the percentage of independent non-executive directors and firm financial performance

The independent non-executive directors are one of the important board characteristics. They need to provide independent opinions to the board and then monitor the board's performance. The Hong Kong listing rules state the requirements on the number of independent non-executive directors. Chen and Jaggi (2000) found a positive relationship between firm financial performance and the percentage of independent non-executive directors in Hong Kong. But the study could not provide any detailed explanation about why any factor can cause the increase in the number of independent non-executive directors. Darmadi (2013) also found a statistically significant positive relationship between the number of independent non-executive directors and firm financial performance. Meyer and de Wet (2013) also found the same results.

Donaldson (1990) and Fuzi et al. (2016) concluded that the percentage of independent non-executive directors is positively related to firm financial performance. Both studies use ROA and Tobin's Q as firm financial indicators. The independent non-executive directors can exert a more positive influence on the shareholder value and not the profitability of the company. According to their study, investors may trust the financial statements of a company more if it has a high percentage of independent non-executive directors. They will be willing to put more investments into a company with a higher percentage of independent non-executive directors. Under agency theory, the independent non-executive directors owe a responsibility to the shareholders. Unlike the roles and responsibilities of executive directors, the independent non-executive directors focus on their controlling roles, and they may not focus on profit maximization.

Hypothesis 4a (H4a): *There is a positive relationship between the percentage of independent non-executive directors and ROA.*

Hypothesis 4b (H4b): *There is a positive relationship between the percentage of independent non-executive directors and Tobin's Q.*

Hypothesis 4c (H4c): *There is a positive relationship between the percentage of independent non-executive directors and Z-Score.*

Relationship between the number of board meetings and firm financial performance

The number of board meetings means the time of meetings that the company holds during the financial period/year. It may affect the firm financial performance because the board members can meet in the board meetings and then discuss the strategic issues, company policies and other matters. It can enhance the firm financial performance of the company. Conger et al. (1998) found that board meeting time is very critical to improving the effectiveness of the board. Lipton and Lorsch (1992)

found that board can improve firm financial performance by increasing the number of meetings. According to their study, the board members can have more time to discuss corporate issues and strategies. They can also perform their duties with more diligence and concern for shareholders' interests. If the number of board meetings increases, it can enhance the firm financial performance. It reflects that management can have more time to discuss all subject matters of the company and the major impact on board effectiveness is a lack of time to complete directors' duties. Compared with the study of Lipton and Lorsch (1992), Vafeas's study (1999) can provide a more in-depth analysis of the relationship between the number of board meetings and firm financial performance. Firm performance of both financial and non-financial aspects can be enhanced if more board meetings were conducted. His study used ROA as a firm financial indicator. The non-financial aspect is the quality of decision-making and the strategies of the company. His study considered the costs associated with the increasing number of board meetings. The cost includes managerial time, travel expenses, and director's fee. The board cannot meet too frequently because of the expense of the company and the directors. Increasing the number of board meetings is not good for firm financial performance, and it can only increase the expenses of the company. Increasing number of board meetings has inversely related to the firm value.

Hypothesis 5a (H5a): *There is a positive relationship between the number of board meetings and ROA.*

Hypothesis 5b (H5b): *There is a positive relationship between the number of board meetings and Tobin's Q.*

Hypothesis 5c (H5c): *There is a positive relationship between the number of board meetings and Z-Score.*

Relationship between the education level of board members and firm financial performance

We live in a knowledge society, and it expects board members with higher education to bring more insights to the board. Carpenter and Westphal (2001) found that board members with higher qualifications can facilitate the board's effectiveness. According to their study, it can also enhance the board's performance by increasing board effectiveness. Erhardt et al. (2003) also found a positive relationship between the educational level of board members and firm financial performance. The study focused on several firm financial indicators, e.g., ROA.

Education level is divided into academic and professional education. Regarding academic education, Westphal and Milton (2000) found that board members with a research-based degree can facilitate firm financial performance because they can analyze all options in detail and review the strategies in more depth. They can present their unique points of view. According to their study, board members with a doctorate in philosophy (Ph.D.) can have a positive impact on the firm financial performance. Regarding professional education, Yermack (2006) found that share price reactions are sensitive to the professional qualification of the board members, especially the accounting finance professional qualification. According to his study, the results reflect those shareholders may trust listed companies more if they are under the management of accounting and finance professionals. It can easily be understood why the HKEX imposes requirements on board members' qualifications, such as accounting and finance qualifications. In this study, the education level focuses on board members who have master's degrees or above. It excludes honorary doctorate holders.

Hypothesis 6a (H6a): *There is a positive relationship between the education level of board members and ROA.*

Hypothesis 6b (H6b): *There is a positive relationship between the education level of board members and Tobin's Q.*

Hypothesis 6c (H6c): *There is a positive relationship between the education level of board members and Z-Score.*

Relationship between board size and firm financial performance

Board size is the number of members on the board. The board should be comprised of members with different professional backgrounds who contribute their ideas to the board so it can assist the company to design the strategy according to the studies by Pfeffer (1972) and Pearce and Zahra (1992). Kalsie and Shrivastav (2016) found that board size has positive impacts on ROA, Tobin's, and Z-Score. According to their study, a larger board size can prevent a single board member to dominant the board. Qadorah and Fadzil (2018) and Badu and Appiah (2017) concluded that a large board size can enhance the monitoring influence between members, and it can enhance the ROA of the company. Nakano and Nguyen (2012) found that increasing board size can lower corporate risks because taking more board members can enhance the monitoring effect. Their study was performed in Japan, and there was no influence in US. Apart from US, Topak (2011) found that board size has no significant relationship with ROA and Tobin's Q in Middle East. de Luis-Carnicer et al. (2008) stated that a larger board size can reduce the variability of corporate performance. According to their study, a larger board size enables opinions from different experts on the board as it is composed of experienced professionals with different backgrounds and gender.

Hypothesis 7a (H7a): *There is a positive relationship between the board size and ROA.*

Hypothesis 7b (H7b): *There is a positive relationship between the board size and Tobin's Q.*

Hypothesis 7c (H7c): *There is a positive relationship between the board size and Z-Score.*

The control variables are firm size and company type. The control variables are kept constant during the research. It is assumed that firm size and company type will not influence the dependent and independent variables.

The moderating variable is the board size. A large board size may mean the inclusion of more professionals who can influence the relationship between family involvement and firm financial performance. In other words, family involvement and influence may not be so strong under a large board size. For small board sizes, the influence of family involvement may be different, and the family members can exert more influence and impact the firm financial performance. The influence of board size can reduce the agency problem as more board members can minimize the CEO duality problem. In other words, if the same person acts as CEO and chairman, he/she cannot dominate the board's decision-making under a larger board size. Furthermore, more board members can also provide more knowledge to the board during the strategizing process. Increasing the board size may have a positive impact on firm financial performance under the agency theory and stewardship theory, because it minimizes the agency cost as a single or few directors cannot dominate the board's decision-making under agency theory. Therefore, the quality of decision-making can improve as more professional ideas can be obtained under stewardship theory.

The moderating effect of board size on the relationship between family involvement and firm financial performance

The moderating variable of board size exerts influence on the relationship between firm financial performance and family involvement. García-Ramos and García-Olalla (2011) stated a negative relationship between board size and family involvement. Increasing of board size can weaken the influence of the family members. It is because more outside directors appoint and monitor the conduct of the family members. It can improve the performance. Haleblian and Finkelstein (1993) proved that a larger board size can minimize the dominance of some members and enhance the firm performance. Elson (1996) and Becht et al. (2005) also found that increasing board size can enhance the monitoring influence of the board; therefore, the family members cannot dominate the board. Williams et al. (2005) further found that increasing board size can reduce the power of the family directors and reduce their frauds. In this case, it can enhance the value of the firm. Schnake and Williams (2008) also discovered that a larger board size can accept more diverse opinions and minimize the impact of the family directors. But Prevost et al. (2002) posed that increasing board size can increase the family involvement and then more resources from the family.

Hypothesis 8a (H8a): Board size moderates the relationship between family involvement and ROA.

Hypothesis 8b (H8b): Board size moderates the relationship between family involvement and Tobin's Q.

Hypothesis 8c (H8c): Board size moderates the relationship between family involvement and Z-Score.

If there is an increase in board size, a decrease in the influence of family involvement will have better firm financial performance.

The moderating effect of board size on the relationship between CEO duality and firm financial performance

The moderating variable of board size exerts influence on the relationship between CEO duality and firm financial performance. Gill and Mathur (2011) stated a negative relationship between board size and firm financial performance. According to their study, CEO duality exerts a positive impact on the firm financial performance. But the board size can lower the impact of CEO duality and then make the firm financial performance poorer. Hermalin and Weisbach (1998) found the same result as the board size increases and then the effect of CEO duality decreases. According to their study, increasing board size can enhance the monitoring role of the board as it can reduce the CEO duality. Qadorah and Fadzil (2018) found the larger the board size, the better performance can be achieved in the company. It is because extra board monitoring can be achieved through more appointments of board members. The influence of CEO duality can reduce according to their study. The shareholders' value can improve. On the contrary, Lehn et al. (2004) found that there is no robust relationship among board size, CEO duality, and firm financial performance. Dalton and Dalton (2005) also found the same conclusion as Lehn et al. (2004). Singh and Harianto (1989) found that a large board size can reduce the impact of CEO duality and firm financial performance can improve. They discovered that the domination power of CEO duality reduces under a larger board size. The reason is due to board diversity. Under agency theory, increasing board size can reduce the agency costs of the company and enhance the board's independence.

Hypothesis 9a (H9a): Board size moderates the relationship between CEO duality and ROA.

Hypothesis 9b (H9b): Board size moderates the relationship between CEO duality and Tobin's Q.

Hypothesis 9c (H9c): Board size moderates the relationship between CEO duality and Z-Score.

If there is an increase in board size, the effect of CEO duality will lower which will improve the firm financial performance.

The moderating effect of board size on the relationship between gender diversity and firm financial performance

The moderating variable of board size exerts influence on the relationship between gender diversity and firm financial performance. Shukeri et al. (2012) found a positive relationship between board size, gender diversity and firm financial performance. According to their study, board size can enhance such a positive influence between gender diversity and firm financial performance. More female directors are appointed to the board if the board size increase. It can also enhance the firm financial performance. Erhardt et al. (2003) stressed increasing board size can provide more opportunities for female directors to the board. It can improve the firm financial performance. Cater et al. (2003) also found large board size can elect more female directors and enrich the discussion process. It can cause a positive impact on the firm value, especially the financial value of the company. On the contrary, Bonn (2004) found that board size cannot influence the relationship between gender diversity and firm financial performance, either ROA or Tobin's Q.

Hypothesis 10a (H10a): Board size moderates the relationship between gender diversity and ROA.

Hypothesis 10b (H10b): Board size moderates the relationship between gender diversity and Tobin's Q.

Hypothesis 10c (H10c): Board size moderates the relationship between gender diversity and Z-Score.

If there is an increase in board size, the effect of gender diversity is increased which will improve the firm financial performance.

The moderating effect of board size on the relationship between the percentage of independent non-executive directors and firm financial performance

The moderating variable of board size exerts influence on the relationship between the appointment of independent non-executive directors and firm financial performance.

It can evaluate whether a large board size will result in the appointment of more independent non-executive directors. Bebeji et al. (2015) found that an increase in board size can result in composition with more different backgrounds of independent non-executive directors which can facilitate firm financial performance. The board can appoint more independent non-executive directors and then it can enhance the monitoring of the board's decision-making process. Hermalin and Weisbach (1998) found that increasing board size can increase board independence and then improve the firm financial performance. Becht et al. (2005) found that increasing board size can enhance board independence as more independent non-executive directors will be appointed. The firm financial performance, ROA, can be improved under their study. Ramdani and Wittleloostuijn (2010) found there are no moderating effect of board size on the relationship between the number of independent non-executive directors

and ROA. Increasing or decreasing the board size has no impact on the relationship between the number of independent non-executive directors and ROA.

***Hypothesis 11a (H11a):** Board size moderates the relationship between the appointment of independent non-executive directors and ROA.*

***Hypothesis 11b (H11b):** Board size moderates the relationship between the appointment of independent non-executive directors and Tobin's Q.*

***Hypothesis 11c (H11c):** Board size moderates the relationship between the appointment of independent non-executive directors and Z-Score.*

If there is an increase in board size, there will be an increase in the number of independent non-executive directors which will improve the firm financial performance.

The moderating effect of board size on the relationship between the number of board meetings and firm financial performance

The moderating variable of board size exerts influence on the relationship between the number of board meetings and firm financial performance. A large board size may need more meeting time and frequency of board meetings to reach compromise on the company policies and other issues. Vafeas (1999) found a larger board size has more board activity and needs more frequent board meetings to enhance the board performance. Otherwise, it causes poorer firm financial performance. Shakir (2008) also discovered the large board size needs more board meetings to discuss the issues. But the firm financial performance can improve or not. It depends on how cooperative the board members are. It is difficult to obtain a concrete conclusion. According to his study, the board members need to involve in traveling time to attend the board meeting. It is because the board members locate in different locations, and it may be

inconvenient to physically attend the board meeting in other locations. It causes poorer firm financial performance. But it may not be the problem nowadays as more advanced technology can facilitate online meetings, such as Zoom, Microsoft Team and Google Meet. Boone et al. (2007) found that larger board size has more resources than smaller boards, such as comments from more professional members. It can facilitate the board's outcome and stimulate firm financial performance. According to their study, it can improve the board's outcome and benefit the firm financial performance. Increasing the number of the board meeting can increase interaction between the board members and it can improve the firm financial performance.

But Al-Matari (2014) found that board size can exert a positive influence on the number of the board meeting and then the firm financial performance. According to his study, it is not very significant. Increasing the board size cannot exert a significant influence on the relationship between the number of board meetings and the firm financial performance.

Hypothesis 12a (H12a): Board size moderates the relationship between the number of board meetings and ROA.

Hypothesis 12b (H12b): Board size moderates the relationship between the number of board meetings and Tobin's *Q*.

Hypothesis 12c (H12c): Board size moderates the relationship between the number of board meetings and Z-Score.

If there is an increase in board size, there will be an increase in the number of board meetings which will improve the firm financial performance.

The moderating effect of board size on the relationship between the education level of board members and firm financial performance

The moderating variable of board size exerts influence on the relationship between the education level of board members and firm financial performance. Boadi and Osarfo (2019) found that a company with a large board size expects its board members to have a diverse education level. According to their study, a large board enables analysis of the company strategies from different angles of different experts and thereby improves firm performance. Boone et al. (2007) stated that increasing board size can enhance the board diversity and appoint members with diverse expertise in their fields. It can accept high-quality professionals and then improve the firm financial performance. Ingley and Van Der Walt (2001) stated high qualification of board members can act as strategic resources of the company and connect different external resources, such as cooperation with other companies. According to their study, a larger board size can create a better discussion environment than a smaller board. Highly educated board members can exchange their ideas with other highly educated board members. This can improve the firm financial performance. The increasing board size can increase the appointment of higher education board members and then enhance the firm financial performance. In this study, the education level of board members is the number of board members with master's degrees or above.

Hypothesis 13a (H13a): Board size moderates the relationship between the education level of board members and ROA.

Hypothesis 13b (H13b): Board size moderates the relationship between the education level of board members and Tobin's Q.

Hypothesis 13c (H13c): Board size moderates the relationship between the education level of board members and Z-Score.

If there is an increase in board size, board members with different educational backgrounds can join the board and contribute their knowledge to company policies.

To sum up, the board size moderates the dependent variables and independent variables to different degrees. Regarding the relationship between family involvement and firm financial performance, increasing board size can reduce the dominating power of family directors. The board can accept different opinions from more board members with different background. It can improve the firm financial performance. Regarding CEO duality, increasing board size can diminish the impact of CEO duality. The board size can weaken family involvement and CEO duality with firm financial performance. Regarding gender diversity, increasing board size can have a positive impact on the relationship between gender diversity and firm financial performance. Increasing board size can increase the appointment of female directors. This is the same result as for independent non-executive directors. Increasing board size can increase the appointment of independent non-executive directors. Regarding the number of board meetings and number of board members with higher education, increasing board size can have a positive influence and then increase the firm financial performance.

3.4 Chapter summary

This chapter provides the detailed information of the conceptual framework of this study. The conceptual framework facilitated the investigation of the relationship between the board characteristics and firm financial performance. Regarding board characteristics, this study selects family involvement, gender diversity, CEO duality, percentage of independent non-executive directors, number of board meetings and

education level of board members to study the relationship with ROA, Tobin's Q as well as Z-Score.

Furthermore, the impact of moderating variable, i.e., board size, on the dependent variables and independent variables are also investigated. Through the development of the conceptual framework, it constructs thirteen hypotheses of this study. The thirteen hypotheses expect to identify which board characteristics to cause positive impact on the firm financial performance. So, it can provide recommendations about how to build a good board structure and let different board members to know their responsibility inside the boardroom.

Chapter 4. Research methodology

4.1 Introduction

This chapter evaluates the research methodology of this study on two major research methods—the qualitative and quantitative research methods. After design the conceptual framework and hypotheses, it needs to select the appropriate research method. This section evaluates the pros and cons of these two different research methods to consider which method is better for this study.

According to past studies on this topic as shown in the literature review section, a qualitative research method or quantitative research method can be used. Each of them has pros and cons depending on which type of firm performance is being studied. For non-financial performance, it is better to use qualitative research methods, e.g., investigation of the quality of decision-making, strategy formation, and management attitude toward corporate social responsibility. For financial performance, it is better to use quantitative research methods and use some scientific measurements to evaluate the firm financial performance. This study mainly focuses on the investigation of the relationship between board characteristics and firm financial performance. The literature review section reviewed the past studies in both quantitative and qualitative research. The evaluation of firm financial performance should include some concrete measures to evaluate board performance. Apart research method, this chapter provides more information about the data source, sampling method, and procedures of analysis. A detailed interpretation of the variables provides in this chapter. Furthermore, it also discusses the ethical issue of this study.

4.1.1 *Research philosophy*

The research philosophy of this study is positivism, which has six important properties of positivism. They are real, useful, certain, correct, organic and relative. The secondary data possess all these six properties. One example of secondary data is the data from annual reports of listed companies, because annual reports of listed companies are real information and useful for the reader. The information in the annual report is also certain and correct as all information must be verified by independent external auditors. The information carried organic and relative properties as all of them are prepared by concise guidance. From ontology perspective, the information is regarded as real and independent. From epistemology perspective, the information is measurable and quantitative research is a scientific method. From axiology perspective, the researcher can perform the research more neutral and prevent bias, because conclusions are drawn from the actual statistical result.

This research is limited to the data collection and interpretation of the results in objective ways, and research finding is quantifiable and observable. Positivism often relies on quantitative observations with subsequent statistical analysis performed. It tries to explain the phenomenon through scientific methods. This study expected to deduce a general pattern of board structure to achieve good firm financial performance, and the research design of this study selected certain board characteristics for investigation.

4.1.2 *Quantitative approach*

The advantage of the quantitative approach of this study is the availability of the data. All data are extracted from the annual reports of listed companies on the HKEX. In addition, the reliability of the data is not a problem as all of them are from historical

records of the listed companies. Cooper and Schindler (2013) suggested adopting a quantitative approach to assess numerical data for statistical analysis. Anderson et al. (2011) performed a study of the cost and benefits of a diverse board of directors and a less diverse board of directors by using the quantitative research method. Disadvantages of the quantitative approach include some characteristics of boards that may not be interpreted by numerical data only. Myskova and Hajek (2017) stated that the comprehensive assessment of the firm financial performance should use financial ratios. According to their study, researchers can extract different information from the annual reports of the company. Spearman correlation can be used to compare the values of firm financial indicators. This study adopts the quantitative research method.

4.1.3 *Qualitative approach*

The advantage of the qualitative approach is that data were obtained through actual interviews with CEOs of listed companies, e.g., personal characteristics. Cooper and Schindler (2013) stated that the qualitative approach involves the exploration of content for analysis. Furthermore, it also obtains in-depth information, and the researcher can drill down to the questions. The disadvantages of the qualitative approach are that it cannot prevent bias of the interviewees and the sample must be large enough to make a reliable conclusion. Furthermore, the selection of appropriate interviewee is very important. But the critical factor is that it is difficult for the interviewer to evaluate the correctness of the interviewee, and it is easy to draw incorrect conclusions.

Regarding firm financial performance, it may not be feasible to obtain details through an interview as it is impossible to ask the interviewees to estimate the financial results

of different board characteristics during the interview. For example, the interviewees cannot be asked to estimate the financial results of a company if the company appoints more independent non-executive directors to the board. This study used the quantitative research method. According to McNulty et al. (2013), there are very few studies on corporate governance which use the qualitative research method, especially to measure effective corporate governance with firm financial performance.

4.2 Research model

This study evaluated three firm financial indicators, i.e., ROA, Tobin's Q, and Z-Score with three research models as follows:

Model a:

Model a uses ROA as the firm financial indicator.

Return on assets ("ROA") = β_1 Family Involvement + β_2 Female Directors + β_3 CEO Duality + β_4 Independent Non-Executive Directors + β_5 Number of Board meeting + β_6 Education level of board members + β_7 Board size + Error

Model b:

Model b uses Tobin's Q as the firm financial indicator.

Tobin's Q = β_1 Family Involvement + β_2 Female Directors + β_3 CEO Duality + β_4 Independent Non-Executive Directors + β_5 Number of Board meeting + β_6 Education level of board members + β_7 Board size + Error

Model c:

Model c uses Z-Score as the firm financial indicator.

$$\begin{aligned} \text{Z-Score} = & \beta_1 \text{ Family Involvement} + \beta_2 \text{ Female Directors} + \beta_3 \text{ CEO Duality} + \beta_4 \\ & \text{Independent Non-Executive Directors} + \beta_5 \text{ Number of Board meeting} + \beta_6 \text{ Education} \\ & \text{level of board members} + \beta_7 \text{ Board size} + \text{Error} \end{aligned}$$

These three models study the effects of independent variables on different firm financial indicators.

4.3 Sampling method

This study selected 120 listed companies in Hong Kong as samples. The sampling method and this study period is similar with that of the study of Lam and Lee (2012). Their study randomly selected around 115 listed companies from the HKEX, and the study period is from 2001 to 2003. It is also similar with the study of Bazrafshana et al. (2016). Their study randomly selected 121 listed companies from the HKEX, and the study period is from 2006 to 2013. In the study of Horváth and Spirollari (2012), they randomly selected 134 listed companies from S&P 500 index and the study period is from 2005 to 2009.

In this study, it used the random number generator function of Microsoft Excel. After generating the random number, it needs to check whether such a company exists in the database of the HKEX. If the selected company is under the GEM board or the suspense of trade or bank / financial institution, it needs to select another target. This function ensured the effectiveness of the random sampling method. The study period of this study is from 2015 to 2019, because during the consecutive five years, the study can observe any strategy change of the targeted companies that affect the firm

financial performance. The strategy change may be due to the changes in board composition. For example, it may be due to the changes in the number of family directors, number of female directors, number of independent non-executive directors, number of board meetings, and number of high education director; but it may not be a CEO duality issue. This study period facilitated the comparisons of firm performances of the same company over a period of five years. For example, the number of independent non-executive directors may be the same for the five years; but members may be replaced by new independent non-executive directors. Therefore, the strategy may change and then it may affect the firm financial performance positively or negatively; this effect can be examined by relating financial performance to some other board characteristics. Furthermore, previous studies also used the five-year study period. For this study, targeted companies issued their 2020 annual reports in mid-2021; and in the five-year period of study, the latest issue for this study is the annual report for year 2019. All data were extracted from the annual reports of the targeted companies. In this study, five financial periods of 120 targeted companies were covered with 600 cases. The data were obtained from secondary sources, i.e., the websites of the HKEX and the targeted companies. Random sampling was used to select the targeted companies. The purpose was to ensure that companies were selected from different industries. Prevost et al. (2002) used secondary data to investigate the effect of board composition on firm financial performance, but the weakness of their study was that the study period was up to 1997. Since their study was performed around 2001 to 2002, latest information for new study should be more appropriate, and it is feasible to use more up-to-date secondary data to study the relationship between board characteristics and firm financial performance.

Some companies are excluded from the sample. First, this study does not consider listed companies on the Growth Enterprises Market ("GEM") board, because companies on the GEM board are mainly start-up businesses. Most of them have no profit-making record or even loss-making for certain years. It is a very high-risk market. Furthermore, share prices fluctuate extremely on GEM, and shares may be held only by a small number of people; therefore, samples taken from GEM may cause bias in this study. Second, this study also excluded companies whose trade was suspended between 2015 and 2019 in order to prevent missing data and distortion of the survey results. Third, this study also excluded banks and public utilities like the study of Anderson and Reeb (2003) because most of them are regulated by government regulations. They cannot reflect the relationship between board characteristics and firm financial performance.

4.4 Data source

This study used secondary data, and all data for this study were collected from the HKEX. The database of the HKEX stores data of companies for the past 20 years, including interim reports, annual reports, circulars, and announcements. In addition, some information can be obtained from the websites of the targeted companies. According to Chapter two of the Hong Kong listing rules, companies are required to have a well-established website to facilitate communications between the company and shareholders to increase the transparency of companies. This study collected the data, the availability of which is not problematic; and it applied SPSS to run hierarchical regression analysis and correlation analysis on such data. The statistical results of the SPSS analyses can prove any significant relationships between the independent variables and dependent variables, and SPSS can be used to investigate the moderating effect of the moderating variable.

4.5 Interpretation of variables

This study used dependent variables, independent variables, moderator variable, and control variables to analyze the relationship between board characteristics and firm financial performance.

4.5.1 *Dependent variables of this study*

This study used three firm financial indicators as dependent variables to reflect firm financial performance, which include ROA and Tobin's Q—these two indicators were used in the study of Kiel and Nicholson (2003)—and Z-Score which was used in Altman's (1968) study. These firm financial indicators can be extracted from annual reports of the targeted companies, and they be calculated; hence they are objective showing the actual performance of the targeted companies.

ROA reflects how efficiently the management or board of directors uses the assets of the company, and it reflects how well the board performs (Carter et al., 2003). Tobin's Q mainly focuses on the stock price of companies, and it reflects the confidence of investors and the market response to companies' performances. It reflects how shareholders perceive the management's ability to manage the company, and it can be more psychological and reflect the market feeling regarding the future of the companies (Kapopoulos & Lazaretou, 2007). The Z-Score includes five different factors, which can be shown by the formula for Z-Score = $0.012X_1 + 0.014X_2 + 0.033 X_3 + 0.0006 X_4 + 0.999X_5$. Where X_1 equals working capital divided by total assets; this factor is used to evaluate the liquidity of a company. X_2 equals retained earnings divided by total assets; it is used to evaluate the reinvestment level of a company from net income. X_3 equals earnings before interest and taxes divided by total assets; this factor indicates the operating efficiency of the company. X_4 equals

firm's market value equity divided by book value of total debt; this factor is used to evaluate the value of a company. X5 equals sales divided by total assets, and it indicates the capability of the company to generate sales. Z-Score analyzes firm financial performance from different aspects, e.g., earnings, sales revenue, and stock performance. It reflects how well the management maintains the solvency of the company.

4.5.2 *Independent variables of this study*

This study used several board characteristics as independent variables, and it evaluated their impacts on firm financial performance. In particular, this study investigated which of these independent variables have significant relationships with firm financial performance.

For family- or non-family-owned companies, the influence of the family depends on the percentage of family holdings in the equity shares of companies. The family is the largest shareholder of the companies and obtains a controlling interest in their companies. It can be defined as a family-owned business. The Hong Kong listing rules define shareholders holding more than 30% of voting power shareholding as having a controlling interest in the companies. This variable counts how many family members are appointed to the board, and the percentage of family members on a board can be obtained from companies' annual publications.

Regarding the gender diversity of the board, this independent variable is due to the number of female directors on the board. It counts how many female members appointed to the board, and the percentage of female members on the board can be obtained from companies' annual publications.

CEO duality is a controversial issue. Many scholars discovered that CEO duality is not a good practice because the CEO and chairman are different people to enable cross-monitoring; however, some found that CEO duality may not be a bad thing. There are two different views on CEO duality. In this study, this dummy variable is assigned the value of “0” if the CEO and chairman are the same people. Otherwise, the dummy variable is assigned the value of “1” if the CEO and chairman are different people.

The percentage of independent non-executive directors measures the amount of independent non-executive directors on the board, and it reflects the independence of the board. This study calculated how many independent non-executive directors are on the board.

The number of board meetings is the number of board meetings held by the company during a financial year. At board meetings, board members can discuss the issues of the company, e.g., policy, strategy, and findings of different committees. Data were extracted from the Corporate Governance Report of the targeted companies. It is the responsibility of the company to disclose the number of board meetings and meetings of different committees, e.g., the audit committee, nomination committee, and remuneration committee. Such a report is one section of an annual report of the targeted companies, and it can be obtained from the HKEX or the company website.

Regarding the educational background of board members, qualifications can be divided into academic and professional education. For the academic level, the major categories are bachelor, master, and doctorate degree. Professional education is quite diversified, such as accounting and finance, engineering. Data on the education level

of board members focus on the number of board members with master's degrees or above, which means that board members have obtained master's degrees and/or doctorate degrees. The degree of an honorary doctorate will not be counted as such the degree is not a formal academic award. It is just recognition by a university to some people who made contributions to society. Honorary doctorates are not a formal academic qualification, and it is like a certificate of appreciation.

4.5.3 *Moderating variable of this study*

This study used board size as the moderating variable, and it exerts an influence on the relationship between the dependent variables and independent variables. Board size is the total number of directors on a board, and it includes all categories of directors, e.g., executive directors, non-executive directors, and independent non-executive directors. Executive directors are the people who participate in the daily operation of the board, and non-executive directors do not participate in the daily operation of the company. Independent non-executive directors provide independent opinions to the board on strategies or any subject matter on the board.

4.5.4 *Control variables of this study*

This study used two control variables: firm size and company type. Firm size is the total asset value of the company; it includes assets and liabilities. It reflects the value of the company. Company type can be obtained from information in annual reports of companies. There are two main types of companies based on the difference of business operations. One type of company refers to those companies registered in Hong Kong with local business operations. The other type refers to those companies registered in Hong Kong but with business operations in Mainland China. In other words, the locations of business operations are different. These two types of

companies can be labeled as Hong Kong-based and “Hong Kong and Mainland China”-based companies. For a Hong Kong-based company, the principal business address and place of operation are in Hong Kong. For a “Hong Kong and Mainland China”-based company, the principal business address is in Hong Kong and the place of operation is in Mainland China. In this study, there are two types of companies. Hong Kong-based companies are assigned the value of “0”. “Hong Kong and Mainland China”-based companies are assigned the value of “1”.

4.6 Measurement of the variables

This study used four types of variables—dependent variables, independent variables, moderating variable, and control variables.

All variables of this study are summarized in the following Table 1:

Name of variable	Type of variable	Definition	Measures
Return on assets	Dependent	It measures the returns to the shareholders. In other words, it is how profitable the business is and measures how efficiently the management uses the assets to generate returns. In other words, ROA measures the operating effectiveness of the company to generate profit.	The formula is Net income / Total assets

Tobin's Q	Dependent	It is an indicator of the market value of a company for investors and it can reflect the market value of the company.	The formula is the Market value of the company / Total assets of the company
Z-Score	Dependent	It is an indicator of the profitability of a company and whether a firm will go bankrupt. This indicator can show how well the board manages the company and Vo and Nguyen (2014) used this firm financial indicator for the performance of the board.	<p>The formula is $Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$.</p> <p>$X_1$ = working capital / total assets. It measures liquid assets to the size of the company.</p> <p>X_2 = retained earnings / total assets. It measures profitability and reflects the company's age and earning power.</p> <p>X_3 = earnings before interest and taxes / total assets. It measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long-term viability.</p> <p>X_4 = market value of equity/book value of total liabilities. It adds a market dimension that can show up security price fluctuations as a possible red flag.</p> <p>X_5 = sales / total assets. The standard measure for total asset turnover (varies greatly from industry to industry).</p>

Family involvement	Independent	It measures the involvement of family members on the board of the company. In this study, the impact of family involvement may be one of the important phenomena to investigate. It is the number of family directors on the board. It is a critical factor as the majority of Hong Kong listed companies are family owned. From past research, it is known that the influence of family directors cannot be ignored.	It measures the ratio of family members on the board (Anderson & Reeb, 2003). Family members are mainly the founder and his close relatives, such as his wife, son and daughter. This information can be obtained from the directors' profiles in the annual report. It counts the percentage of family members on the board. The formula is the number of family members / Total number of directors
Gender diversity	Independent	It is one of the board diversity factors. Generally, the board should consist of both male and female board members to obtain opinions from both genders.	It measures the number of female directors on the board. It can calculate the percentage of female directors on the board. The formula is number of female directors / Total number of directors (including executive directors and independent non-executive directors)

CEO duality	Independent	<p>CEO duality is about the same person acting as the chairman and CEO at the same time.</p> <p>The corporate governance code of Hong Kong encourages the posts of chairman and CEO to be filled by two separate people so it can enhance the cross-monitoring effect of the chairman and CEO.</p> <p>It is because the chairman and CEO are the two highest posts on the board.</p>	<p>From the profile of directors, information can be obtained about whether the same person acts as the chairman and CEO at the same time. If the chairman and CEO are one person, it is assigned the value of "0". If the chairman and CEO are two separate people, it is assigned the value of "1".</p>
Independent non-executive directors	Independent	It is the percentage of independent non-executive directors on the board	The percentage of independent non-executive directors is the number of independent non-executive directors on the board or the proportion of independent non-executive directors over the total number of board members.
Number of board meetings	Independent	The number of board meetings is the number of meetings held by the board members during the financial year.	The number of board meetings can be extracted from the annual report of the targeted company as it is a statutory requirement of the company to give such information.

Education level of board members	Independent	The education level of board members is information about the education level of the board members, such as bachelor's degree, master's degree, and doctorate degree. Some of them may not be formal academic or professional qualifications.	The educational background of the board members can be found in the bibliography in the annual report as well as the annual report from the website of the HKEX and also the website of the targeted company. This study focuses on the academic qualifications of the board members. It counts the number of board members with master's degrees or above.
Board size	Moderating	Board size is the total number of directors (including executive directors, non-executive directors, and independent non-executive directors) on the board.	For board size, the information can be extracted from the annual report of the company.
Firm size	Control	Firm size is about the total asset value of the company.	The firm size is the total asset value of the company.
Company type	Control	In Hong Kong, there are mainly two types of companies, i.e. Hong Kong-based and "Hong Kong and Mainland China"-based.	Each type of company is assigned the same number. For example, a Hong Kong-based company is assigned the value of "0". A "Hong Kong and Mainland China"-based company is assigned the value of "1".

Table 1: Detailed information of variables

4.7 Validity of the method used

This study used a quantitative research method because the focus was on the investigation of board characteristics and firm financial performance. It is appropriate to use quantitative research methods. As shown in the literature review section, this study adopted the methodology of past studies.

4.8 Reliability of the data

The data is derived from the secondary sources, e.g., the HKEX and the websites of the sample companies. From the HKEX, financial reports and other announcements of the targeted companies can be obtained. Financial reports of listed companies in Hong Kong are statutorily required to be audited according to the statutory requirement of the HKEX, and such audits follow the requirements of the HKICPA. Additionally, the SFC also oversees financial reporting and the announcements of listed companies in order to ensure adequate guidance and monitoring of the quality of financial information. During the preparation of financial reports, an external auditor needs to perform an in-depth investigation and give his opinion on the financial data and results of the company, e.g., whether it is a going concern. Financial reports are published on the website of the HKEX and the websites of targeted companies; the data in such financial reports are free of bias.

4.9 Generalizability of the research

This study selects 120 listed companies in Hong Kong and the examined period was from 2015 to 2019. There were 600 samples in this study. The listed companies were selected randomly from the HKEX. According to the 2021 statistics of the HKEX, there are 2,185 listed companies on the main board. The selected companies represent 5.5% of the whole population. This study aims to make a theoretical contribution to

the academic aspect as well as a practical contribution to the industrial aspect. Regarding theoretical contribution, this study used the agency theory, stewardship theory, and resource dependence theory to interpret the results. The results made contributions to these three theories. Regarding industry contribution, this study provided comments on the board's structure, e.g., the appointment of family directors, female directors, and independent non-executive directors. The impact of CEO duality was also investigated. Furthermore, it presented insights about the board process, e.g., influence of the number of board meetings and the higher education level of board members who hold master's degrees or above.

4.10 Procedures of the analysis

This study investigated the pattern of the content quantitatively by using statistical methods, i.e., SPSS. After the collection of data from the annual reports of the targeted companies, SPSS was used to perform a hierarchical regression analysis to identify the significant factors that affect firm financial performance. This study further evaluated any moderating effect of board size on the relationship between board characteristics and firm financial performance. After performing the hierarchical regression analysis, it can show any statistically significant relationship between the selected board characteristics and firm financial performance. Furthermore, hierarchical regression analysis of the moderating effect of board size on the relationship between selected board characteristics and firm financial performance was also performed. It can prove the hypotheses of this study. Afterwards, it can be used as a basis for theoretical and practical discussion.

To sum up, this quantitative research used historical data from the HKEX to investigate how board characteristics impact firm financial performance. The

phenomenon can be explained through scholarly literature. Regarding the limitation of this study, the sample size was only 120 targeted companies so the sample size could be increased to enhance the reliability of the research. Furthermore, it may be better to perform in-depth interviews with the board members of certain listed companies to collect insights from the board members. In the future, the results of this study can be evaluated through interviews with the board members. One example is whether gender diversity can enhance the firm financial performance or not. This is better to evaluate through observation and interview, because it may be the limitation of using a quantitative research method.

4.11 Ethical issues

Regarding ethical issues, all data were obtained from the HKEX and all of them were historical data. All data are publicly available and ethical issues may not be a problem. Furthermore, all data are examined by the independent external auditors of the targeted companies. It can minimize the fraud of the data. One weakness of secondary data is that the data may not suit for specific needs of the researchers, e.g., the decision-making process of the company and the attitude of board members. Before the preparation of this study, the application for ethical approval was submitted to the university and obtained approval on 30th January 2020. It can refer to appendix 18.

4.12 Chapter summary

This chapter performs in-depth analysis of the research methodology. It gives the information about the reasons of using the quantitative research method. For data source, it can collect from the database of the HKEX or the website of the targeted company. For research philosophy, it uses the positivism approach to perform this study as all data is historical information. It provides detailed interpretation of

different variables in this study, such as the measurement of the firm financial indicators. There is statutory requirement of the listed companies to perform annual external audit for the financial information. The accuracy and reliability of the data should be no problem. For ethical issue, this study uses the secondary data, and all data is public available. It also obtained the ethical approval from the University.

Chapter 5. Analysis and Findings

5.1 Introduction

Following the research methodology in chapter 4, it performed this study step by step. Based on the selected dependent variables, independent variables, moderating variable, and control variables, all data were collected from annual reports of the targeted companies. Such data were collected from the website of the HKEX or the website of the targeted companies. Under Chapter 2 of Hong Kong listing rules, all listed companies must maintain their websites as the major communication channel for companies, the stakeholders, shareholders, and the public. All announcements and financial reports must be posted on the websites of the companies, and such information should be available to the public. After data collection, a SPSS was run to perform the statistical analysis. This study performed correlation coefficient analysis and regression analysis. The correlation coefficient analysis analyzed any correlated relationship between the variables. The regression analyses included multiple regression analysis or hierarchical regression analysis. For multiple regression analysis, the method was used to analyze the relationship between a single dependent variable and several independent variables. It assumed that the independent variables are not highly correlated with each other. The hierarchical regression analysis is a special form of a multiple regression analysis in which the variables are added to the model and allow the researcher to process the data analysis. In the hierarchical regression analysis, this study selected the control variables, i.e., firm size and company type, and then it selected the independent variables. This study also examined the moderating effect of the board size on other board characteristics that affect firm performance. The interaction of board size with each of the independent variables was entered one by one in five different models. The numeric variables of this study include number of family directors, number of female directors, number of

independent non-executive directors, number of the board meeting, number of board members with master's degrees or above, board size, and firm size in this study. The hierarchical regression analysis was also performed in this study. CEO duality and company type are dichotomous variables; the value of CEO duality is either "0" or "1". It is the same situation in company type. These two variables were used in independent samples t-test to investigate any significant influence on the firm financial indicators.

This chapter provides the analysis and findings of statistical results. It was divided into three sections. First, it provides a general overview of the statistical analysis of this study. Second, it presents descriptive statistics of the independent variables, dependent variables, moderating variable, and control variables. Third, it provides the hierarchical regression analysis to identify any statistically significant relationship between the dependent variables, independent variables, and moderating variable. This study used correlation coefficient analysis, hierarchical regression analysis, and independent samples t-test of SPSS.

5.2 Descriptive statistics

Relevant data were collected for different variables including (1) the dependent variables (i.e., ROA, Tobin's Q, and Z-Score), (2) the independent variables (i.e., percentage of family directors, gender diversity, CEO duality, percentage of independent non-executive directors, number of board meetings and education level of board members), (3) the control variables (i.e., firm size and company type), and (4) the moderating variable (i.e., board size). Subsequently, this study applied SPSS for statistical analysis to obtain the statistical results, e.g., descriptive statistics, hierarchical regression analysis, and correlation coefficients.

Appendix 1 shows the different characteristics of the dependent variables, independent variables, and moderating variable. This study selected 120 targeted companies listed in Hong Kong with 600 cases covering a 5-year period for study from 2015 to 2019.

For dependent variables, the descriptive statistics are as follows:

As shown by the statistical results, ROA represented how well the management used the assets to generate returns. The maximum value of ROA was 0.95, and the minimum value is -2.34. The negative value of ROA was due to some sample cases sustained great loss in the sampling period. If the value of ROA is negative, it means a negative return for the company. The statistical results revealed a quite large range, and the mean value is -0.01 for the 600 cases.

For Tobin's Q, the maximum value is 1.37, and the minimum value is -0.75 due to the net losses of some cases. The mean value is 0.052. Tobin's Q is used to measure the market value of a company to know the market reaction to the performance of a

company. If the management can perform well, the potential shareholders may be more willing to put more investment into the company.

The Z-Score is a credit-strength test created by Altman (1968). The score reflects the effectiveness of the board. If the Z-Score value equals 3, it means that the company has a solid financial background. The assets are sufficient to cover the liabilities. If the Z-Score is lower than 1.8; it means that the company may face bankruptcy, and the assets are not sufficient to cover the liabilities. Regarding the statistical result for the sample cases, the maximum value is 4.78, and the minimum value is -4.24 with a mean value of 0.58. The statistical result showed that some sample cases faced great loss in the sampling period. The value of the Z-Score is very low, and it shows that some of the sampled companies faced liquidity problems, especially those negative value-targeted companies.

For independent valuables, the descriptive statistics are as follows:

Regarding the percentage of family directors, the minimum percentage of family directors is zero which means that there were no family members on the board. In other words, the controlling families of some sample cases do not appoint any family members to the board. The controlling family may appoint outside professionals to manage the company and they may not exert too much influence on the board. From the statistical results, the maximum percentage of family members is 66.67%. In other words, two-thirds of boards of directors are family members in some of the sample cases. The family members can exert influence on the board, such as in decision-making. It may be reflected in the firm financial performance whether there is any significant influence between firm financial performance and the percentage of family directors. The mean value of the percentage of family directors is 21.23%. This

reflects that one-fifth of the board consists of family directors generally. The family members may exert a certain influence on the board's processes.

The results for gender diversity of the board show that the minimum percentage of female directors is zero, which means that there were no female directors on the board. In some cases, the percentage of female directors is around 80%. This means that most of the board members are female. However, this kind of targeted companies is not common, because principal business of these companies is to sell female underwear. The role of female directors may be different in different companies, and female members can exert influence on the board in terms of decision-making. This effect may be reflected by firm financial performance whether there is any significant influence between firm financial performance and the percentage of female directors. The mean value of the percentage of female directors is 11%, which is quite low in average Hong Kong listed companies. According to the statistics of Deloitte (2019), an average 40% of board members are female directors in Western countries, such as Norway.

For CEO duality, the value is either "0" or "1". "0" means that the same person acts as the chairman and CEO at the same time. "1" means that different people act as the chairman and CEO.

For the percentage of independent non-executive directors, the minimum value is 22.22%. This is less than the requirement of the HKEX. According to Chapter three of Hong Kong listing rules, listed companies should follow rule 3.10A to keep one-third of the board independent non-executive directors, and the independent non-executive directors should occupy around 33.33% of the board of directors. Some sample cases

do not comply with such requirements. It may be due to the resignation of independent non-executive directors, and the sample cases cannot find professionals to fill the vacancy yet. Such cases are not considered as fulfilling the requirement of Hong Kong's listing rules. Regarding the maximum percentage, some sample cases appointed 75% of independent non-executive directors to the board for the purpose of enhancing independence of the board by increasing the number of independent non-executive directors. The mean value of the percentage of independent non-executive directors is 43.25%. Independent non-executive directors need to provide independent opinions to the board decision according to their professional background.

Regarding the number of board meetings, the minimum value is zero, and the maximum value is 48 with a mean value of 8. As per the listing requirements, a listed company needs to hold at least four board meetings every financial year. For some sample cases, there are no board meetings in the financial period because they were newly listed in that year; for a sample case, the number of board meetings is 48; therefore, the number of board meetings fluctuates. This irregularity may be attributed to the different needs of the operation of a firm. During the data collection, the reason for increasing the number of board meetings was found to be due to some major decisions of the company, e.g., major shareholders' transaction of selling all their shares or acquiring other companies. Therefore, it is worth discovering any significant relationship between the number of board meetings and firm financial performance.

Regarding the education of the board members, this study mainly investigated the number of board members with a master's degree education or above. Based on the statistical result, the minimum value is 0%, and the maximum value is 100%. In other

words, some sample cases had no board members with master's degrees or above, and in some other sample cases, all members had master's degrees or above. The mean is 38% of board members with master's degree or above. This mean that the board members with master's degree or above are occupied more than one third of the board. Therefore, it is worthy to investigate any significant relationships between the educational level of board members and firm financial performance.

For control variables, the descriptive statistics are as follows:

Firm size is the logarithm of the total assets of a firm, and the logarithm can estimate the firm size of the sample cases. The maximum value of firm size is 5.21, and the minimum value is 1.65 with a mean value of 3.45. Firm size may have a relationship with firm financial performance. A larger company may have more resources to achieve better firm financial performance. This study assumes that firm size does not influence the dependent variables

For company type, the value is either "0" or "1". A value of "0" represents cases that do not operate in Mainland China. They are mainly based in Hong Kong with that as their principal place of business. A value of "1" represents cases that are Hong Kong-based with their major business operation located in Mainland China. This type of company is "Hong Kong and Mainland China"-based. In different types of companies, the board's structure may be quite different, and it affects the board's decision-making. One example is that there are supervisory boards in Mainland China, but there is no such requirement in Hong Kong. This may affect the number of board meetings in these two categories of companies.

Regarding board size, the maximum value is 20, which means 20 directors on the

board. The minimum value is 4. In this sampled case, it has two executive directors and two independent non-executive directors. The average number of directors is around 8 directors on the board.

After completing the statistical analyses on all three firm financial indicators, this study drew conclusions on the impacts of board characteristics on the firm financial performances. Each firm financial indicator may be significantly influenced by different board characteristics.

5.3 Statistical analysis of this study

In this section, the regression analysis focuses on three research models. This study used the hierarchical regression analysis and examined three dependent variables, which are ROA, Z-Score, and Tobin's Q. The stated purpose is to investigate the influence of selected board characteristics on different firm financial indicators.

5.3.1 *Board characteristics that influence the ROA*

ROA as a dependent variable was used to evaluate the relationship between the independent variables and moderating variables. This evaluation follows the research model a below:

Model a:

$$\text{Return on assets ("ROA")} = \beta_1 \text{ Family Involvement} + \beta_2 \text{ Female Directors} + \beta_3 \text{ CEO Duality} + \beta_4 \text{ Independent Non-Executive Directors} + \beta_5 \text{ Number of Board meeting} + \beta_6 \text{ Education level of board members} + \beta_7 \text{ Board size} + \text{Error}$$

In the statistical analysis, it performed the correlation analysis for all variables first. Then it performed hierarchical regression analysis among ROA, percentage of family directors, gender diversity, number of board meetings, education level of board members, the board size, and firm size. For CEO duality and types of company, it performs the independent samples t-test.

Before performing the hierarchical regression analysis to test the relationships between ROA and the independent variables, the correlation coefficients of all continuous variables were evaluated. This evaluation covered the correlation coefficients of ROA with the percentage of female directors, percentage of family

directors, CEO duality, percentage of independent non-executive directors, ROA, firm size, company type, number of board meetings, education level of board members, and board size.

Apart from the correlation between ROA and firm size, none of the correlations are high enough to warrant any problem of multicollinearity because the correlation coefficient between all independent variables and ROA was weak, except for firm size according to Appendix 2.

The Pearson correlation coefficient as shown in Appendix 2 interprets the degree of correlation between the dependent variable and independent variables. If the correlation coefficient is smaller than 0.3, there is a weak correlation between dependent variables and independent variables. There is a strong correlation between dependent variables and independent variables if the value is greater than 0.7. Otherwise, there is a moderate correlation between the dependent and independent variables.

Appendix 2 shows the correlation coefficients between ROA and the independent variables. For ROA and percentage of family directors, the correlation coefficient is 0.11 and it is weakly positively correlated. For ROA and gender diversity, the correlation coefficient is 0.01 and it is weakly positively correlated. For ROA and CEO duality, the correlation coefficient is 0.03 and it is weakly positively correlated. For ROA and percentage of independent non-executive directors, the correlation coefficient is -0.18 and it is weakly negatively correlated. For ROA and firm size, the correlation coefficient is 0.39 and it is moderately positively correlated. For ROA and company type, the correlation coefficient is 0.04 and it is weakly positively correlated.

For ROA and the number of board meetings, the correlation coefficient is -0.18 and it is weakly negatively correlated. For ROA and education level of board members, the correlation coefficient is 0.02 and it is weakly positively correlated. For ROA and board size, the correlation coefficient is 0.13 and it is weakly positively correlated.

Apart from the correlation between ROA and firm size, none of the correlations are high enough to warrant any problem of multicollinearity because the correlation coefficient between the independent variables and ROA is so weak, except for firm size.

The hierarchical regression analysis testing investigated which independent variables have a relationship with ROA. The hierarchical regression analysis results using SPSS are presented in Appendix 3.

Regarding the percentage of family directors, there is a statistically significant positive relationship between ROA and the percentage of family directors (regression coefficient = 0.106, $p < 0.05$). In other words, increasing the percentage of family directors had a positive influence on the ROA in the sample cases. In Hong Kong, many listed companies are family-owned businesses, and the family members also dominate the board's decision-making power according to Deva (2018). According to his findings, over 90% of the listed companies in Hong Kong are owned by individuals or families. The individual or family owns more than 25% of the shares. The family members can exert influence over the board.

Regarding gender diversity, there is no statistically significant relationship between ROA and gender diversity (regression coefficient = 0.005, $p > 0.05$). ROA has no

statistically significant relationship with the number of female directors. In other words, increasing or decreasing the number of female directors did not affect the ROA of the sample cases.

Regarding the percentage of independent non-executive directors, there is a statistically significant negative relationship between the ROA and the percentage of independent non-executive directors (regression coefficient = -0.092, $p > 0.05$). The ROA has no statistically significant relationship with the percentage of independent non-executive directors. In other words, increasing the percentage of independent non-executive directors will not affect the ROA of the sample cases. According to Sharifah et al. (2016), the role of independent non-executive directors is not strictly for the best interest of shareholders, such as improving the ROA. The independent non-executive directors may not cause a positive impact on the ROA. The independent non-executive directors exert more influence on the compliance aspects. In other words, the independent non-executive directors need to ensure that the board complies with the regulations and prevents any misconduct. The increasing of independent non-executive directors may enhance the quality of the board, such as business ethics in the decision-making process and compliance with regulations. It can minimize the moral hazards and adverse selection of the board. The role of independent non-executive directors may be only to ensure the compliance of listed companies with different regulations.

Regarding the number of board meetings, there is a statistically significant negative relationship between ROA and the number of board meetings (regression coefficient = -0.087, $p < 0.05$). In other words, increasing the number of board meetings negatively affected the ROA of the sample cases. If listed companies hold more board

meetings; it may not result in better ROA. The increasing number of board meetings may be due to some significant changes in the company, such as changes in controlling shareholders and the acquisition of other companies.

Regarding the educational level of the board members, there is no statistically significant relationship between ROA and the educational level of the board members (regression coefficient = 0.024, $p > 0.05$). In other words, increasing or decreasing the board members with master's degrees or above did not affect the ROA of the sample cases.

Regarding board size, there is no statistically significant relationship between ROA and board size (regression coefficient = -0.078, $p > 0.05$). ROA has no statistically significant relationship with board size. Increasing or decreasing the board size cannot have any impacts on ROA.

Regarding firm size, there is a statistically significant positive relationship between ROA and firm size (regression coefficient = 0.374, $p < 0.05$). In other words, increasing the firm size positively affected the ROA of the sample cases. Some large listed companies have more resources for development. It can obtain a better ROA.

To sum up, the result of hierarchical regression analysis is summarized in the following table:

Independent variables	Regression coefficient	p-value	Relationship with return on assets (“ROA”)
Percentage of family directors	0.106	0.009	Statistically significant positive relationship
Gender diversity	0.005	0.903	No statistically significant relationship
Percentage of independent non-executive directors	-0.092	0.065	No statistically significant relationship
Number of board meetings	-0.087	0.025	Statistically significant negative relationship

Education level of board members (Board members with master's degrees or above)	0.024	0.536	No statistically significant relationship
Board size	-0.078	0.130	No statistically significant relationship
Firm size	0.374	0.000	Statistically significant positive relationship

Table 2: Summary of hierarchical regression analysis of ROA as the dependent variable

Table 2 shows that the two independent variables can have statistically significant relationships with ROA. They are the percentage of family directors and the number of board meetings. The percentage of family directors has a statistically significant positive relationship with the ROA. To enhance ROA, family directors can exert a positive influence on the board's decision-making. In Hong Kong, most companies are family-owned businesses, and members participate in the management of their companies. The number of board meetings has a statistically significant negative

relationship with firm financial performance.

Regarding gender diversity, there is no statistically significant relationship between gender diversity and the ROA. The changes to the number of female directors on the board cannot achieve an improvement in ROA. The influence of female directors is still limited in Hong Kong. For CEO duality and the education level of board members, they have no significant relationships with the ROA. In addition, neither the number of independent non-executive directors nor board size has a significant relationship with the ROA. Regarding the control variables, firm size has a statistically significant positive relationship with the ROA, and a large firm size can enhance the ROA of a company.

Independent samples t-tests were performed to evaluate the two independent variables, i.e., CEO duality and company type on the impact of the ROA. The test investigated any statistically significant difference between the same person acting as the chairman as well as the CEO or different people acting as the chairman and CEO and ROA. It also investigated any statistically significant difference between Hong Kong-based companies and “Hong Kong and Mainland China”-based companies and ROA.

As shown in Appendix 4, for the independent samples t-test between CEO duality and ROA; a “0” value represents the same person acting as chairman and CEO, and a “1” value represents different persons acting as chairman and CEO. Of the sample cases, a number of 431 companies had different persons acting as chairman and CEO, while the rest of 169 sample cases had the same person acting as chairman and CEO. The independent samples t-tests revealed that there is no statistically significant difference between the company with CEO duality and the company without CEO duality on the

ROA. In other words, there is no difference between the same person acting as chairman and CEO or different people acting as chairman and CEO as $p > 0.05$. In other words, the same person acting as chairman and CEO or different persons acting as chairman and CEO did not have a statistically significant influence on the ROA of the sample cases. However, in past studies, some scholars found that there was a statistically significant relationship between CEO duality and the ROA; for instance, Lam and Lee (2008) found a negative relationship between CEO duality and the ROA as it is a family-controlled business in Hong Kong. They found a positive relationship between the CEO duality and the ROA as it is a non-family-controlled business in Hong Kong. But their study was performed ten years ago. While Freihat et al. (2019) found a positive relationship between CEO duality and the ROA; some scholars found that there was no statistically significant relationship between CEO duality and the ROA, for example, Shukeri et al. (2012) found no relationship between CEO duality and the ROA. Therefore, it may be difficult to conclude whether CEO duality is good or bad for the ROA. In Hong Kong, CEO duality will not have any impact on the ROA.

As shown in Appendix 5, for the independent samples t-test between company type and ROA; a “0” represents a Hong Kong-based company, and “1” represents “Hong Kong and Mainland China”-based company. Of the sample cases, 492 companies are Hong Kong-based companies, and 108 companies are “Hong Kong and Mainland China”-based companies. From the independent samples t-test, there is no statistically significant difference between Hong Kong-based companies and “Hong Kong and Mainland China”-based companies on ROA as $p > 0.05$. The independent samples t-test can further prove that the company type does not influence ROA. This matches the assumption of this study that company type does not impact firm financial

performance. In other words, there is no significant difference between Hong Kong-based and “Hong Kong and Mainland China”-based listed companies, which may be due to the “Hong Kong and Mainland China”-based listed companies also need to strictly follow the Hong Kong listing rules and the financial statements need to be audited by external auditors. In this case, the ROA between Hong Kong-based and “Hong Kong and Mainland China”-based listed companies has no significant difference. This matches the assumption that the company type cannot have any influence on the ROA. All listed companies need to comply with the same regulations from various regulatory bodies, such as the HKEX, the SFC, and the HKICPA.

Referring to Appendix 6, Table 3 below presents the analytical results for moderating variable of board size regarding the relationship with the ROA and percentage of family directors, CEO duality, gender diversity, percentage of independent non-executive directors, number of board meetings, and education level of board members.

	Regression coefficient	P-value
Board size x Percentage of family directors	0.046	0.741
Board size x CEO duality	-0.088	0.046
Board size x gender diversity	-0.037	0.794
Board size x Percentage	0.342	0.021

of independent non-executive directors		
Board size x Number of board meetings	-0.32	0.01
Board size x Education level of board members	-0.209	0.204

Table 3: Hierarchical regression analysis of the moderating variable – board size with ROA and independent variables: percentage of family directors, CEO duality, gender diversity, independent non-executive directors, number of board meetings and education level of board members.

From Table 3, board size has no statistically significant relationship with ROA and the percentage of family directors (regression coefficient = 0.046, $p > 0.05$). The board size cannot influence the company to appoint more family directors. Board size has statistically significant negative relationship with ROA and CEO duality (regression coefficient = -0.088, $p < 0.05$). Increasing board size can weaken the effect of CEO duality and then improve the ROA. The board size has no statistically significant relationship with ROA and gender diversity (regression coefficient = -0.037, $p > 0.05$). For the number of female directors, the board size cannot influence the company to appoint more female directors and then improve the ROA. Large board size is not expected to appoint more female directors. Board size has a statistically significant positive relationship with ROA and the percentage of independent non-executive directors (regression coefficient = 0.342, $p < 0.05$). The

percentage of independent non-executive directors is related to board size. A large board size may appoint more independent non-executive directors and then improve the ROA. Board size has a statistically significant negative relationship with ROA and the number of board meetings (regression coefficient = -0.32, $p < 0.05$). Board size has a negative impact on the relationship between the number of board meetings and ROA. Board size has no statistically significant relationship with ROA and the education level of board members (regression coefficient = -0.209, $p > 0.05$). Increasing the board size cannot cause the company to appoint more highly qualified board members to enhance the ROA, such as appointing more board members with master's degrees or above.

When considering the hypotheses under the dependent variable of ROA as the firm financial indicator, the following Table 4 can be populated:

Hypothesis	Regression coefficient	P-value	Results
H1a: There is a statistically significant positive relationship between family involvement and ROA.	0.106	0.009	H1a is accepted.
H2a: There is a statistically significant positive relationship between gender diversity of the board and ROA.	0.005	0.903	H2a is rejected.
H3a: There is a different impact of CEO duality and without CEO duality		0.367	H3a is rejected.

on ROA.			
H4a: There is a statistically significant positive relationship between the percentage of independent non-executive directors and ROA.	-0.092	0.065	H4a is rejected.
H5a: There is a statistically significant positive relationship between the number of board meetings and ROA.	-0.087	0.025	H5a is rejected.
H6a: There is a statistically significant positive relationship between the education level of board	0.024	0.536	H6a is rejected.

members and ROA.			
H7a: There is a statistically significant positive relationship between board size and ROA.	-0.078	0.130	H7a is rejected.
H8a: Board size moderates the relationship between family involvement and ROA with a negative impact.	0.046	0.741	H8a is rejected.
H9a: Board size moderates the relationship between CEO duality and ROA with a negative impact.	-0.088	0.046	H9a is accepted.
H10a: Board size moderates the	-0.037	0.794	H10a is rejected.

relationship between gender diversity and ROA with a positive impact.			
H11a: Board size moderates the relationship between the percentage of independent non-executive directors and ROA with a positive impact.	0.342	0.021	H11a is accepted.
H12a: Board size moderates the relationship between the number of board meetings and ROA with a positive impact.	-0.320	0.010	H12a is rejected.
H13a: Board size	-0.209	0.204	H13a is rejected.

moderates the relationship between the education level of board members and ROA with a positive impact.			
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Table 4: Statistical analysis result of ROA as the firm financial indicator

To sum up, Table 4 shows a summary of the hypothesis testing results. Hypotheses H1a, H9a and H11a are accepted. Other hypotheses are rejected according to the results of hierarchical regression analysis. For H1a, the increase in family ownership can enhance the ROA of the company. From the independent samples t-test, there is no statistically significant relationship between the same person acting as chairman and CEO and different persons acting as chairman and CEO. According to HKICPA, it encourages listed companies to appoint two separate persons to act as CEO and chairman respectively to enhance the corporate governance, such as monitoring effect on the board.

For the moderating variable, H9a and H11a are accepted. Board size can weaken the effect of CEO duality as more board members can monitor the performance of the board. Board size can exert a positive influence on the relationship between the percentage of independent non-executive directors and the ROA. A company will have a greater intention to appoint more independent non-executive directors to obtain independent opinions on the strategy formation and decision-making process. Board

size cannot influence the relationship between the percentage of family directors and the ROA. Board size cannot influence the relationship between the percentage of female directors and the ROA. Board size can exert an influence on the relationship between the number of board meetings and the ROA, but it has a statistically significant negative relationship. Increasing the board size cannot influence the relationship between the number of board meetings and the ROA positively. Board size cannot influence the company to appoint more board members with master's degrees or above and then improve the ROA.

Regarding control variables, large firm size can enhance firm financial performance, and it may be due to large firms having more resources for development. It does not match the assumption of firm size as the control variable in the case of ROA under research Model a. The ROA has no significant difference between Hong Kong-based and "Hong Kong and Mainland China"-based companies. It can match the assumption of this study.

5.3.2 *Board characteristics that influence the Tobin's Q*

By using Tobin's Q as the firm financial indicator to evaluate the relationship with the independent variables and moderating variables. This evaluation follows the research model b below.

Model b:

$$\text{Tobin's Q} = \beta_1 \text{ Family Involvement} + \beta_2 \text{ Female Directors} + \beta_3 \text{ CEO Duality} + \beta_4 \text{ Independent Non-Executive Directors} + \beta_5 \text{ Number of Board meeting} + \beta_6 \text{ Education level of board members} + \beta_7 \text{ Board size} + \text{Error}$$

In the statistical analysis, this study performed the correlation analysis for all variables first, and then it performed hierarchical regression analysis between Tobin's Q, percentage of family directors, gender diversity, number of board meetings, education level of board members, the board size and firm size. For CEO duality and types of company, this study performed the independent samples t-test.

This study evaluated the correlation coefficients of all continuous variables, before performing the hierarchical regression analysis to test the relationship between Tobin's Q and the independent variables. Model b evaluated the correlation coefficients of Tobin's Q with the percentage of family directors, gender diversity, CEO duality, percentage of independent non-executive directors, firm size, company type, number of board meetings, education level of board members, and board size. Appendix 7 presents the Pearson correlation coefficients, which interprets the degree of correlation between the dependent variables and independent variables.

The correlation coefficient matrix in Appendix 7 shows that Tobin's Q causes

different correlation coefficients with the independent variables. For Tobin's Q and percentage of family directors, the correlation coefficient is -0.12, and it is weakly negatively correlated. For Tobin's Q and percentage of female directors, the correlation coefficient is 0.004, and it is weakly positively correlated. For Tobin's Q and CEO duality, the correlation coefficient is -0.16, and it is weakly negatively correlated. For Tobin's Q and percentage of independent non-executive directors, the correlation coefficient is 0.12, and it is weakly positively correlated. For Tobin's Q and firm size, the correlation coefficient is -0.48, and it is moderately negatively correlated. For Tobin's Q and company type, the correlation coefficient is 0.09, and it is weakly positively correlated. For Tobin's Q and the number of board meetings, the correlation coefficient is 0.18, and it is weakly positively correlated. For Tobin's Q and the education level of board members, the correlation coefficient is 0.11, and it is weakly positively correlated. For Tobin's Q and board size, the correlation coefficient is -0.13, and it is weakly negatively correlated.

Apart from the correlation between Tobin's Q and firm size, none of the correlations are high enough to warrant any problem of multicollinearity because the correlation coefficient between the independent variables and Tobin's Q is so weak, except for firm size.

After performing the hierarchical regression analysis with SPSS, the results are shown in Appendix 8. For the percentage of family directors, there is no statistically significant relationship between Tobin's Q and the percentage of family directors (regression coefficient = -0.073, $p > 0.05$). In other words, an increase or decrease in the percentage of family directors cannot affect Tobin's Q of the sample cases. But the family members cannot exert influence on the board and cannot affect Tobin's Q

according to the statistical results of this study. It is due to Tobin's Q being the market value of the company, and it is the perception of investors of the company.

Regarding gender diversity, there is no statistically significant relationship between Tobin's Q and the percentage of female directors (regression coefficient = -0.008, $p > 0.05$). In other words, the increase or decrease of the percentage of female directors cannot affect Tobin's Q of the sample cases.

Regarding the percentage of independent non-executive directors, there is no statistically significant relationship between Tobin's Q and the percentage of independent non-executive directors (regression coefficient = -0.020, $p > 0.05$). Tobin's Q has no statistically significant relationship with the number of independent non-executive directors. In other words, an increase or decrease in the percentage of independent non-executive directors does not influence Tobin's Q of the sample cases. According to Sharifah et al. (2016), the role of independent non-executive directors is not strictly for the best interest of shareholders, such as improving firm financial performance and firm value. Hence, they need to enhance the transparency of the financial report.

Regarding the number of board meetings, there is no statistically significant relationship between Tobin's Q and the number of board meetings (regression coefficient = 0.057, $p > 0.05$). In other words, an increase or decrease in the number of board meetings cannot improve or weaken Tobin's Q of the sample cases.

Regarding the education level of board members, there is a statistically significant positive relationship between Tobin's Q and the number of board meetings (regression

coefficient = 0.112, $p < 0.05$). In other words, an increase in the number of board members with master's degrees or above can improve Tobin's Q of the sample cases. Board members with higher education can strengthen the confidence of investors. This reflects that investor believes that board members with a higher education level can lead the board better, and it is good for the long-term development of the company.

Regarding board size, there is a statistically significant positive relationship between Tobin's Q and board size (regression coefficient = 0.064, $p < 0.05$). In other words, an increase in board size can improve Tobin's Q of the sample cases. Vinish and Shridhar (1999) discovered that a larger board size can enhance corporate performance as the board will have more professionals from different backgrounds. In Hong Kong, many listed companies with a large board can facilitate Tobin's Q. A larger board size was usually composed of more professionals from different backgrounds. It is expected that the expertise and professional skills of different board members can enhance the firm financial performance, because a larger board size provides a better image to investors and helps to enhance the value of Tobin's Q.

Regarding firm size, there is a statistically significant negative relationship between Tobin's Q and firm size (regression coefficient = -0.507, $p < 0.05$). In other words, an increase in firm size has a negative influence on Tobin's Q of the sample cases. This does not match the assumption that firm size cannot exert any influence on Tobin's Q.

The results of hierarchical regression analyses were summarized in the following

Table 5:

Independent variables	Regression coefficient	P value	Relationship with Tobin's Q
Percentage of family directors	-0.073	0.057	No statistically significant relationship
Gender diversity	-0.008	0.816	No statistically significant relationship
Percentage of independent non-executive directors	-0.020	0.667	No statistically significant relationship
Number of board meetings	0.057	0.125	No statistically significant relationship
Education level of board members (Board members with master's degree or above)	0.112	0.003	Statistically significant positive relationship

Board size	0.064	0.035	Statistically significant positive relationship
Firm size	-0.507	0.000	Statistically significant negative relationship

Table 5: Summary of hierarchical regression analysis of Tobin's Q as dependent variable

Table 5 shows how one independent variable can have statistically significant relationships with Tobin's Q, which is the education level of board members. The education level of the board members can also benefit Tobin's Q. For the control variable, firm size has a negative relationship with Tobin's Q. A larger firm size may not benefit Tobin's Q. For moderating variable, the board size can have statistically significant relationship with Tobin's Q. The large board size can benefit Tobin's Q.

Regarding gender diversity, there is no statistically significant relationship with Tobin's Q. The changes in the number of female directors on the board may not achieve an improvement in Tobin's Q. Regarding the percentage of independent non-executive directors, there is no statistically significant relationship with Tobin's Q. The changes in the number of independent non-executive directors cannot improve Tobin's Q. The number of the board meeting also has no statistically significant relationship with Tobin's Q.

Independent samples t-tests were used to evaluate the two independent variables, i.e., CEO duality and company type, regarding their impacts on Tobin's Q. These tests can

investigate any statistically significant relationships between the same person acting as the chairman as well as CEO and different people acting as the chairman and CEO on Tobin's Q. These tests can also investigate any statistically significant relationships between Hong Kong-based companies and "Hong Kong and Mainland China"-based companies on Tobin's Q.

Appendix 9 shows the independent samples t-test results between CEO duality and Tobin's Q; a "0" represents the same person acting as chairman and CEO, and "1" represents different persons acting as chairman and CEO. Of the sample cases, 431 cases have different persons acting as chairman and CEO, while 169 cases have the same person acting as chairman and CEO. According to the independent samples t-test, there is a different performance if the same person acts as chairman and CEO compared to if different persons act as chairman and CEO as $p < 0.05$. In past studies, some scholars found that there is a statistically significant negative relationship between CEO duality and firm financial performance, such as Coles and Hesterly (2000) who found a negative relationship between CEO duality and Tobin's Q. Tobin's Q supports that there is a different impact of CEO duality and without CEO duality in Hong Kong. The results suggested that the positions of CEO and chairman should be taken by two separate people, so that they can monitor each other to make better board decisions.

Appendix 10 shows the independent samples t-test results between company type and Tobin's Q; a "0" represents Hong Kong-based companies, and "1" represents "Hong Kong and Mainland China"-based companies. Of the sample cases, 492 cases are Hong Kong-based companies, and 108 cases are "Hong Kong and Mainland China"-based companies. From the independent samples t-test results, there is a

statistically significant relationship between Hong Kong-based companies and Tobin's Q. There is also a statistically significant relationship between "Hong Kong and Mainland China"-based companies and Tobin's Q. In other words, there is a difference between Hong Kong-based companies and "Hong Kong and Mainland China"-based companies as regards Tobin's Q as $p < 0.05$. In other words, there is a significant difference between Hong Kong-based and "Hong Kong and Mainland China"-based companies. This may be due to the different management styles of Hong Kong-based companies and "Hong Kong and Mainland China"-based companies. In this case, Tobin's Q between Hong Kong-based and "Hong Kong and Mainland China"-based listed companies may be different. Investors have different perceptions between Hong Kong-based and "Hong Kong and Mainland China"-based companies, which can be reflected by the market value of Tobin's Q of the company.

Referring to Appendix 11, Table 6 below shows the analytical results of the moderating variable of board size regarding the relationship with Tobin's Q and percentage of family directors, CEO duality, gender diversity, percentage of independent non-executive directors, number of board meetings, and education level of board members.

	Regression coefficient	P-value
Board size x Percentage of family directors	-0.262	0.048
Board size x CEO duality	-0.068	0.105
Board size x Gender	-0.091	0.493

diversity		
Board size x Percentage of independent non-executive directors	-0.539	0.000
Board size x Number of board meetings	0.023	0.847
Board size x Education level of board members	0.452	0.004

Table 6: Hierarchical regression analysis of moderating variable – Board size with Tobin's Q and independent variables

From Table 6, board size has a statistically significant negative relationship with Tobin's Q and the percentage of family directors (regression coefficient = -0.262, $p < 0.05$). The board size is inversely proportional to the number of family directors. Hence, if board size increases, then the portion of family directors decreases. In other words, the company may appoint more outside directors to the board and the influence of family members may decrease, so it can improve Tobin's Q. Board size has no statistically significant relationship with Tobin's Q and CEO duality (regression coefficient = -0.068, $p > 0.05$). Board size has no statistically significant relationship with Tobin's Q and gender diversity (regression coefficient = -0.091, $p > 0.05$). The board size cannot cause the company to appoint more female directors and then improve the firm financial performance. Board size has a statistically significant negative relationship with Tobin's Q and the percentage of independent non-executive

directors (regression coefficient = -0.539, $p < 0.05$). An increase in the board size has a negative impact on the number of independent non-executive directors and Tobin's Q. Board size has no statistically significant relationship with Tobin's Q and the number of board meetings (regression coefficient = 0.023, $p > 0.05$). The board size cannot influence the relationship between the number of board meetings and Tobin's Q. Board size has a statistically significant positive relationship with Tobin's Q and board members with master's degrees or above (regression coefficient = 0.452, $p < 0.05$). An increase in board size can cause the company to appoint more board members with higher qualifications to enhance the firm financial performance. If board size increases, it can influence the board to appoint more board members with master's degrees or above. It can give a positive impression to the market. It represents that more talents joined the companies. The market expects that the new joined board members can bring more resources to the company under resource dependence theory. In other words, the future development of the company depends on the involvements of new board members, because they can bring their reputation, personal network, and professional experience to the company. In this case, the firm financial performance can improve. The market gives the positive response about the appointment of highly educated board members, and in turn, such responses were reflected on share price and the Tobin's Q of the company.

Table 7 below shows the test results of the hypotheses on the dependent variable of Tobin's Q as the firm financial indicator.

Hypothesis	Regression coefficient	P-value	Results
H1b: There is a statistically significant positive relationship between family involvement and Tobin's Q.	-0.073	0.057	H1b is rejected.
H2b: There is a statistically significant positive relationship between the gender diversity of the board and Tobin's Q.	-0.008	0.816	H2b is rejected.
H3b: There is a different impact of CEO duality and		0.00	H3b is accepted.

without CEO duality on Tobin's Q.			
H4b: There is a statistically significant positive relationship between the percentage of independent non-executive directors and Tobin's Q.	-0.020	0.667	H4b is rejected.
H5b: There is a statistically significant positive relationship between the number of board meetings and Tobin's Q.	0.057	0.125	H5b is rejected.
H6b: There is a statistically significant positive relationship between the education	0.112	0.003	H6b is accepted.

level of board members and Tobin's Q.			
H7b: There is a statistically significant positive relationship between board size and Tobin's Q.	0.064	0.035	H7b is accepted.
H8b: Board size moderates the relationship between family involvement and Tobin's Q with a negative impact.	-0.262	0.048	H8b is accepted.
H9b: Board size moderates the relationship between CEO duality and Tobin's Q with a	-0.068	0.105	H9b is rejected.

negative impact.			
H10b: Board size moderates the relationship between gender diversity and Tobin's Q with a positive impact.	-0.091	0.493	H10b is rejected.
H11b: Board size moderates the relationship between the percentage of independent non-executive directors and Tobin's Q with a positive impact.	-0.539	0.000	H11b is rejected.
H12b: Board size moderates the relationship between the number of board	0.023	0.847	H12b is rejected.

meetings and Tobin's Q with a positive impact.			
H13b: Board size moderates the relationship between the education level of board members and Tobin's Q with a positive impact.	0.452	0.004	H13b is accepted.

Table 7: Statistical analysis result of Tobin's Q as the firm financial indicator

As shown in Table 7, hypotheses H3b, H6b, H7b, H8b and H13b are accepted. Other hypotheses are rejected according to the results of hierarchical regression analysis. For H3b, there is a different impact of CEO duality and without CEO duality on Tobin's Q. The market concerns whether the company is CEO duality and without CEO duality. For H6b, there is a statistically significant positive relationship between the educational level of board members and Tobin's Q. Increasing the number of board members with higher education can affect Tobin's Q positively. For H7b, there is a statistically significant positive relationship between the board size and Tobin's Q. Board size can also exert a positive influence on Tobin's Q, because larger board size can contain more professionals with different backgrounds, which can benefit Tobin's

Q. One reason may be that a larger board size can enhance the value of the company because of more highly qualified board members.

For the moderating variable, H8b is accepted, and it suggested that board size affects the relationship between family involvement and Tobin's Q negatively. Increasing the board size may minimize the influence of family involvement. This may be due to more outside directors being appointed to the board, thereby reducing the dominance of the family members on the board. Tobin's Q can be improved through the improvement of market recognition. Finally, H13b is accepted, and it shows that board size can also affect the relationship between the education level of board members and Tobin's Q positively. An increase in board size can increase the number of board members with a higher educational level on the board; thereby affecting Tobin's Q positively.

5.3.3 *Board characteristics that influence the Z-Score*

The Z-Score as the dependent variable evaluates the relationship between the independent variables and moderating variable, and the analysis follows Model c below:

Model c:

$$\begin{aligned} \text{Z-Score} = & \beta_1 \text{ Family Involvement} + \beta_2 \text{ Female Directors} + \beta_3 \text{ CEO Duality} + \beta_4 \\ & \text{Independent Non-Executive Directors} + \beta_5 \text{ Number of Board meeting} + \beta_6 \text{ Education} \\ & \text{level of board members} + \beta_7 \text{ Board size} + \text{Error} \end{aligned}$$

In the statistical analysis, the correlation analysis was performed first for all variables; then hierarchical regression analysis was performed on the relationships among Z-Score, percentage of family directors, gender diversity, number of board meetings, education level of board members, the board size, and firm size. Independent samples t-test was performed for CEO duality and types of company.

This study evaluated correlation coefficients of all continuous variables before performing the hierarchical regression analysis to test the relationships among the Z-Score and independent variables. Specifically, this study considered the correlation coefficients of Z-Score with the percentage of family directors, gender diversity, CEO duality, percentage of independent non-executive directors, firm size, company type, number of board meetings, education level of board members, and board size.

Appendix 12 shows the results of the correlation analysis of Z-Score with the independent variables. The Pearson correlation coefficient interprets the degree of correlation among the dependent variable and independent variables. Based on to the

correlation coefficient, the interpretation is as follows:

The correlation coefficient matrix as shown in Appendix 12 shows that the Z-Score has different correlation coefficients with the independent variables. For Z-Score and percentage of family directors, the correlation coefficient is -0.06, and it is weakly negatively correlated. For Z-Score and gender diversity, the correlation coefficient is 0.02, and it is weakly positively correlated. For Z-Score and CEO duality, the correlation coefficient is -0.09, and it is weakly negatively correlated. For Z-Score and the percentage of independent non-executive directors, the correlation coefficient is 0.17, and it is weakly positively correlated. For Z-Score and firm size, the correlation coefficient is -0.19, and it is weakly negatively correlated. For Z-Score and company type, the correlation coefficient is -0.06, and it is weakly negatively correlated. For Z-Score and the number of board meetings, the correlation coefficient is 0.09, and it is weakly positively correlated. For Z-Score and the education level of board members, the correlation coefficient is -0.04, and it is weakly negatively correlated. For Z-Score and board size, the correlation coefficient is -0.07, and it is weakly negatively correlated.

According to the correlation coefficient, the Z-Score is weakly correlated with the percentage of family directors, percentage of female directors, CEO duality, firm size, company type, number of board meetings, education level of board members, and board size. None of the correlations are high enough to warrant any problem of multicollinearity because the correlation coefficients between the independent variables and Z-Score are so weak.

Appendix 13 shows the results of hierarchical regression analysis of the Z-Score with the independent variables. For the percentage of family directors, there is no statistically significant relationship between Z-Score and the percentage of family directors (regression coefficient -0.079 , $p > 0.05$). In other words, an increase or decrease in the percentage of family directors cannot affect the Z-Score of the sample cases.

For gender diversity, there is no statistically significant relationship between Z-Score and the percentage of female directors (regression coefficient $= 0.028$, $p > 0.05$). In other words, an increase or decrease in the percentage of female directors on the board cannot improve the Z-Score of the sample cases.

For the percentage of independent non-executive directors, there is a statistically significant positive relationship between the Z-Score and the percentage of independent non-executive directors (regression coefficient $= 0.173$, $p < 0.05$). So Z-Score has a statistically significant relationship with the number of independent non-executive directors. In other words, an increase or decrease in the percentage of independent non-executive directors influences the Z-Score of the sample cases. The Z-Score reflects the solvency of the company. Compared with ROA and Tobin's Q, the role of independent non-executive directors is much more important regarding Z-Score. Increasing the percentage of independent non-executive directors can improve the Z-Score or solvency of a company through their monitoring of them.

For the number of board meetings, there is no statistically significant relationship between Z-Score and the number of board meetings (regression coefficient $= 0.034$, $p > 0.05$). In other words, an increase or decrease in the number of board meetings

cannot affect the Z-Score of the sample cases.

For the education level of board members, there is no statistically significant relationship between Z-Score and the education level of board members (regression coefficient = -0.048, $p > 0.05$). In other words, an increase or decrease in the number of board members with master's degrees or above cannot affect the Z-Score of the sample cases.

For board size, there is no statistically significant relationship between Z-Score and board size (regression coefficient = 0.096, $p > 0.05$). In other words, an increase or decrease in board size cannot affect the Z-Score of the sample cases.

For firm size, there is a statistically significant negative relationship between Z-Score and firm size (regression coefficient = -0.156, $p < 0.05$). In other words, an increase in firm size decreases the Z-Score of the sample cases. There may be a higher risk for the shareholders. Shah et al. (2016) found a negative relationship between firm size and Z-Score. Companies of a small firm size may have a better Z-Score than companies of large firm size.

Table 8 below summarized the results of the regression analyses as follows:

Independent variables	Regression coefficient	p value	Relationship with Z-Score
Percentage of family directors	-0.079	0.069	No statistically significant relationship

Percentage of female directors	0.028	0.489	No statistically significant relationship
Percentage of independent non-executive directors	0.173	0.001	Statistically significant positive relationship
Number of board meetings	0.034	0.412	No statistically significant relationship
Education level of board members	-0.048	0.251	No statistically significant relationship
Board size	0.096	0.080	No statistically significant relationship
Firm size	-0.156	0.001	Statistically significant negative relationship

Table 8: Summary of hierarchical regression analysis of Z-Score as dependent variable

Table 8 shows that only one independent variable has a statistically significant relationship with Z-Score; it is the percentage of independent non-executive directors. The percentage of independent non-executive directors is directly proportional to Z-Score. This means that increasing the number of independent non-executive

directors can improve the Z-Score. The number of family directors and number of female directors has no statistically significant relationship with Z-Score. An increase or decrease of family directors or female directors on the board may not have the effects of achieving any improvements in the Z-Score. However, some other board characteristics cannot affect the Z-Score, e.g., the number of board meetings and the number of board members with master's degrees or above. Regarding control variables, firm size is inversely proportional to Z-Score. This means that as firm size increases, the Z-Score decreases.

Independent samples t-tests were used to evaluate the impact of two independent variables, i.e., CEO duality and company type on the Z-Score. This test investigated any statistically significant relationship between the same person acting as the chairman as well as the CEO or different people acting as the chairman and CEO on the Z-Score. It can also investigate any statistically significant relationships between Hong Kong-based companies and "Hong Kong and Mainland China"-based companies on the Z-Score.

Appendix 14 of this study shows the results of the independent samples t-test between CEO duality and Z-Score; a "0" represents the same person acting as chairman and CEO, and "1" represents different persons acting as chairman and CEO. An amount of 431 cases of the total samples were the cases that different persons assumed the position as chairman or CEO; while the rest of 169 cases were the cases that the same person acts as chairman and CEO simultaneously. According to the independent samples t-test, there is no statistically significant difference between the company with CEO duality and the company without CEO duality on Z-Score. In other words, there is no difference between the same person acting as chairman and CEO and the

different person acting as chairman and CEO as $p > 0.05$. In other words, the same person acting as chairman and CEO or different persons acting as chairman and CEO has no statistically significant influence on the Z-Score of the sample cases. Some scholars found that there is no statistically significant relationship between CEO duality and the Z-Score. For instance, Shukeri et al. (2006) found no relationship between CEO duality and Z-Score.

Appendix 15 shows the results of the independent samples t-test between company type and Z-Score; a “0” represents Hong Kong-based companies, and a value of “1” represents “Hong Kong and Mainland China”-based companies. In the total sample of this study, 492 cases are Hong Kong-based companies, and 108 cases are “Hong Kong and Mainland China”-based companies. Based on results of the independent samples t-test, there is no statistically significant difference between Hong Kong-based companies and “Hong Kong and Mainland China”-based companies on Z-Score as $p > 0.05$.

Regarding Appendix 16 of the moderating effect of board size, Table 9 below tabulated the relationships of the moderating variable of board size with Z-Score and family directors, CEO duality, gender diversity, percentage of independent non-executive directors, number of board meetings, and education level of board members.

	Regression coefficient	P-value
Board size x Percentage of family directors	-0.156	0.297

Board size x CEO duality	-0.037	0.436
Board size x Gender diversity	0.290	0.053
Board size x Percentage of independent non-executive directors	-0.559	0.000
Board size x Number of board meetings	-0.278	0.037
Board size x Education level of board members	0.122	0.489

Table 9: Hierarchical regression analysis of moderating variable – Board size with Z-Score and independent variables

As shown in Table 9, board size has no statistically significant relationship with Z-Score and the percentage of family directors. The board size does not influence the number of family directors. Board size has no statistically significant relationship with Z-Score and CEO duality. CEO duality is not related board size. Board size has no statistically significant relationship with Z-Score and gender diversity. The board size cannot cause the company to appoint more female directors. The board size has a statistically significant negative relationship with Z-Score and the percentage of independent non-executive directors. A larger board size may appoint fewer independent non-executive directors and weaken the Z-Score. Board size has a

statistically significant negative relationship with Z-Score and the number of board meetings. An increase in board size may not cause the company to hold more board meetings. This may be due to the difficulty of agreeing on a time for more members to meet. The number of board meeting may even reduce and may not enhance the Z-Score. Finally, board size has no statistically significant relationship with Z-Score and board members with master's degrees or above. An increase in board size cannot cause a company to appoint more highly qualified board members to enhance the Z-Score.

To sum up, the moderating variable of board size has no statistically significant relationships with the percentage of family directors, CEO duality, percentage of female directors, and number of board members with master's degrees or above. It has a negative influence on the percentage of independent non-executive directors and number of board meetings.

Table 10 below presents the analytical results under the dependent variable of Z-Score as the firm financial indicator after considering the hypothesis tests.

Hypothesis	Regression coefficient	P-value	Results
H1c: There is a statistically significant positive relationship between family involvement and Z-Score.	-0.079	0.069	H1c is rejected.
H2c: There is a statistically significant positive relationship between the gender diversity of the board and Z-Score.	0.028	0.489	H2c is rejected.
H3c: There is a different impact of CEO duality and		0.066	H3c is rejected.

without CEO duality on Z-Score.			
H4c: There is a statistically significant positive relationship between the percentage of independent non-executive directors and Z-Score.	0.173	0.001	H4c is accepted.
H5c: There is a statistically significant positive relationship between the number of board meetings and Z-Score.	0.034	0.412	H5c is rejected.
H6c: There is a statistically significant positive relationship between the education	-0.048	0.251	H6c is rejected.

level of board members and Z-Score.			
H7c: There is a statistically significant positive relationship between board size and Z-Score.	0.096	0.080	H7c is rejected.
H8c: Board size moderates the relationship between family involvement and Z-Score with a negative impact.	-0.156	0.297	H8c is rejected.
H9c: Board size moderates the relationship between CEO duality and Z-Score with a negative impact.	-0.037	0.436	H9c is rejected.

H10c: Board size moderates the relationship between gender diversity and Z-Score with a positive impact.	0.29	0.053	H10c is rejected.
H11c: Board size moderates the relationship between the percentage of independent non-executive directors and Z-Score with a positive impact.	-0.559	0.000	H11c is rejected.
H12c: Board size moderates the relationship between the number of board meetings and Z-Score	-0.278	0.037	H12c is rejected.

with a positive impact.			
H13c: Board size moderates the relationship between the education level of board members and Z-Score with a positive impact.	0.122	0.489	H13c is rejected.

Table 10: Statistical analysis result of Z-Score as the firm financial indicator

As shown in Table 10, only hypothesis H4c is accepted. Other hypotheses were rejected according to the results of regression analysis. Regarding H4c, there is a significantly positive relationship between the percentage of independent non-executive directors and Z-Score. Apart from H4c, there is no statistically significant relationship between the percentage of family directors and Z-Score. There is no statistically significant relationship between gender diversity and Z-Score. Furthermore, there is also no statistically significant relationship between CEO duality and Z-Score. There is no statistically significant relationship between the number of board meetings and Z-Score. There is also no statistically significant relationship between the number of board members with master's degrees or above and Z-Score. There is no statistically significant relationship between board size and Z-Score. Besides, there is a significantly negative relationship between firm size and Z-Score. Regarding the moderating variables, board size cannot affect the relationship

between Z-Score and all independent variables.

5.4 Chapter summary

Based on the data analysis in this study, conclusions can be drawn from the different firm financial indicators in the hypotheses. This study consists of 13 hypotheses, and this section summarizes the results of all hypotheses. Hypotheses 1 – 7 examined the relationships between the independent variables and the dependent variables. Hypotheses 8 – 13 examined the moderating effect of board size towards the relationships between the independent variables and independent variables.

Table 11 shows the results of the hypotheses tests relating to the relationship among dependent variables and independent variables.

Hypotheses	ROA (Model a)	Tobin's Q (Model b)	Z-Score (Model c)
There is a statistically significant positive relationship between family involvement and firm financial performance.	H1a is accepted	H1b is rejected	H1c is rejected
There is a statistically significant positive	H2a is rejected	H2b is rejected	H2c is rejected

relationship between the gender diversity of the board and firm financial performance.			
There is a different impact of CEO duality and without CEO duality on firm financial performance.	H3a is rejected	H3b is accepted	H3c is rejected
There is a statistically significant positive relationship between the percentage of independent non-executive directors and firm financial performance.	H4a is rejected	H4b is rejected	H4c is accepted
There is a statistically significant positive	H5a is rejected	H5b is rejected	H5c is rejected

relationship between the number of board meetings and firm financial performance.			
There is a statistically significant positive relationship between the education level of board members and firm financial performance.	H6a is rejected	H6b is accepted	H6c is rejected
There is a statistically significant positive relationship between board size and firm financial performance.	H7a is rejected	H7b is accepted	H7c is rejected

Table 11: Summary of the results of hypotheses under three firm financial indicators (i.e., ROA, Tobin's Q, and Z-Score)

Table 11 provides an overview of the statistical results of dependent variables and

independent variables. With three different firm financial indicators as the dependent variables in this study, the independent variables can influence different dependent variables to different degrees. Some of the independent variables can have a statistically significant impact on the specific dependent variable. Some independent variables cannot have any statistically significant impacts on the specific dependent variable. Apart from the relationship between dependent and independent variables, the impacts of moderating variable cannot be ignored, and the moderating variable may have impacts on the relationships among dependent and independent variables.

This study revealed that different relationships exist among the dependent variables and the independent variables, and different results are possible in terms of three financial indicators. For ROA, there is a statistically significant positive relationship with family involvement. For Tobin's Q, there is a different impact on the company with CEO duality and without CEO duality. Furthermore, there is a statistically significant positive relationship with board members with higher education levels. There is also a statistically significant positive relationship with board size. For Z-Score, there is a statistically significant positive relationship with the number of independent non-executive directors. The independence of the board can influence the Z-Score of the company.

Table 12 below shows the statistical results of the hypothesis analysis of the moderating effect of board size on the dependent variables and independent variables.

Hypotheses	ROA (Model a)	Tobin's Q (Model b)	Z-Score (Model c)
Board size moderates the relationship between family involvement and firm financial performance with a negative impact.	H8a is rejected	H8b is accepted	H8c is rejected
Board size moderates the relationship between CEO duality and firm financial performance with a negative impact.	H9a is accepted	H9b is rejected	H9c is rejected
Board size moderates the relationship	H10a is rejected	H10b is rejected	H10c is rejected

between gender diversity and firm financial performance with a positive impact.			
Board size moderates the relationship between the percentage of independent non-executive directors and firm financial performance with a positive impact.	H11a is accepted	H11b is rejected	H11c is rejected
Board size moderates the relationship between the number of board meetings and	H12a is rejected	H12b is rejected	H12c is rejected

firm financial performance with a positive impact.			
Board size moderates the relationship between the education level of board members and firm financial performance with a positive impact.	H13a is rejected	H13b is accepted	H13c is rejected

Table 12: Summary of the results of hypotheses about moderating effect of board size

The statistical results are the moderating influence of board size. As shown in Table 12 that board size does not exert any influences on the relationships between the number of female directors and the three firm financial indicators. Board size can weaken the effect of CEO duality on the board and then enhance ROA. Furthermore, board size exerts influence on the relationship between the percentage of independent non-executive directors and the ROA. According to the study of Bebeji et al. (2015), a larger board size can appoint more independent non-executive directors and enhance the diversity of the board, because more independent professional advice can be obtained to facilitate the performance of the ROA.

For Tobin's Q, board size can exert an influence on the relationship between the percentage of family directors and Tobin's Q. The board size can also exert an influence on the relationship between the education level of board members and Tobin's Q. The board size cannot influence the relationship between Tobin's Q and other independent variables, such as CEO duality, number of independent non-executive directors and number of board meetings. For Z-Score, board size cannot exert any influence on the relationship between the Z-Score and all independent variables.

Chapter 6. Discussions

6.1 Introduction

In this chapter, it provides a detailed discussion on the statistical results of this study. The statistical results of the data analysis revealed that three firm financial indicators have different results under the three research models. Different board characteristics have different impacts on the firm financial performance. This section summarizes the variances among the three firm financial indicators and proposes theoretical contribution in the academic aspect and practical contribution to the industry.

6.2 The effect of family involvement on firm financial performance

Family involvement can influence the decision-making of the board. This study examined any relationships between family control and firm financial performance. Regarding ROA as the firm financial indicator, there is a statistically significant positive relationship, and Hypothesis 1a was accepted. Regarding Tobin's Q and Z-Score as firm financial indicators, there was no statistically significant relationship. Hypothesis 1b and Hypothesis 1c were rejected. Increasing the number of family directors can improve the ROA of the company. For Tobin's Q or Z-Score as the firm financial indicators, family involvement cannot exert influence. According to Lee (2006) and Anderson and Reeb (2003), there is a statistically significant positive relationship between family control and the ROA because family directors are concerned about the firm financial performance as the family has a considerable amount of equity shares in the company. If the company can perform well, it can receive benefits, such as dividends and capital growth. On the other side, it may also reflect that family directors may also take on agent responsibility to act in the best interests of shareholders, i.e., maximizing firm financial performance. Compared with the market price and solvency of the company, the shareholders may be much

concerned about the profitability of the company, i.e., ROA. According to the study of Lee (2006), the family-owned companies outperform non-family-owned companies in Hong Kong.

Mak and Kusnadi (2005) also stated that there is a statistically significant positive relationship between family control and firm performance in Singapore but there is no such statistically significant relationship in Malaysia. It may be due to Singapore being a developed country and Malaysia being a developing country. We can use their study as an example because the financial market of Singapore is very similar to that of Hong Kong. In Singapore, most listed companies are family owned (Chau & Gray, 2002). According to their study, family directors need to bear agency responsibility to the shareholders. Under the agency theory, the board needs to use the power properly and act on behalf of the shareholders to manage the company. The board has a duty of the agency to the shareholders. The board needs to achieve the best performance for the shareholders according to agency theory. One can investigate any positive relationship between family involvement and the ROA because ROA is one of the important indicators to reflect the performance of the board members. It reflects the returns to the shareholders in a quantitative way. Family members have longer investment horizons and a high intention to pass the control of the company to the next generation. They commit to working hard for the company, such as good corporate strategy and using the resources efficiently. They often try to achieve the best performance because the family's wealth is linked to company profitability, which can be reflected by the positive impact on the ROA. The result of this study can explain the majority of Hong Kong listed companies depend on the family funding and the family involvement is very important.

Under resource dependence theory, family members can inject resources into the company, such as personal networks and financial resources. Personal networks may be distinct resources for the company's development in specific markets. This is a reason why many listed companies in Hong Kong are family-owned businesses. It is very important in Chinese society to emphasize "Guanxi" or personal networks. Chow and Ng (2004) found "Guanxi" to be very important for doing business in Hong Kong and Mainland China. Family-owned businesses are very popular in Asian countries. Family involvement may easily influence the ROA. Financial resources may be more important for small capitalization listed companies as the share may not be so attractive to the investors. But Tobin's Q may not easily be influenced by family members as it is the market value of the company. It is the market recognition of the company.

Referring to the statistics, there were 492 sample cases of Hong Kong-based companies, and there were 108 sample cases of "Hong Kong and Mainland China"-based companies. In the 492 sample cases of Hong Kong-based companies, there were 886 family directors on the board. In the 108 sample cases of "Hong Kong and Mainland China"-based companies, there were 138 family directors. These statistics showed that "Hong Kong and Mainland China"-based companies appointed fewer family directors. This may be due to some state-owned enterprises not appointing any family directors to the board. Among 492 sample cases of Hong Kong-based companies, 110 cases did not appoint any family directors to the board, accounting for around 22% of the sample cases. In other words, the family members do not participate in the daily operation or management of these 110 cases. Among 108 sample cases of "Hong Kong and Mainland China"-based companies, 27 cases did not appoint any family directors to the board, accounting for around 25% of the

sample cases.

Figures 5 and 6 below show the appointments of family directors in the targeted companies:

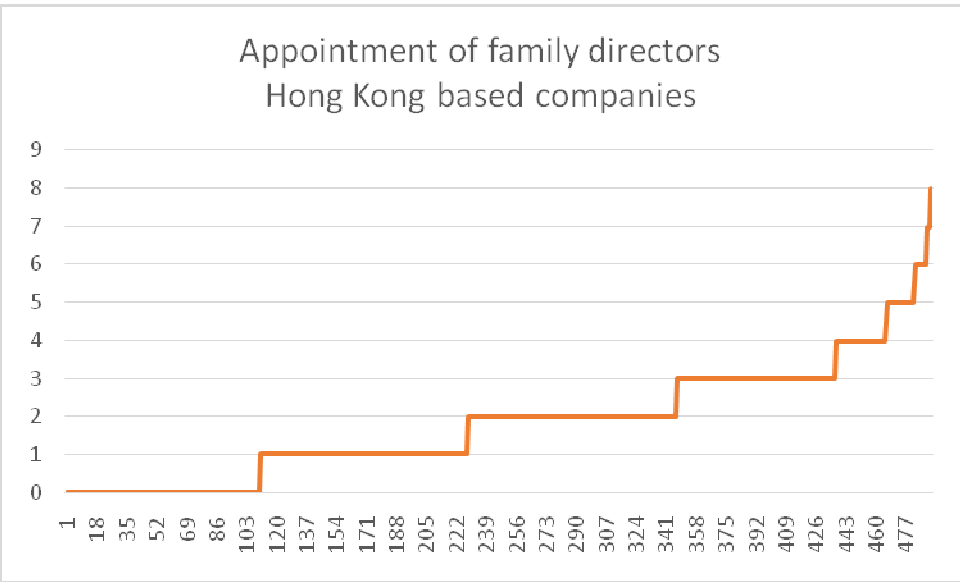


Figure 5: Number of family directors appointed in Hong Kong-based companies

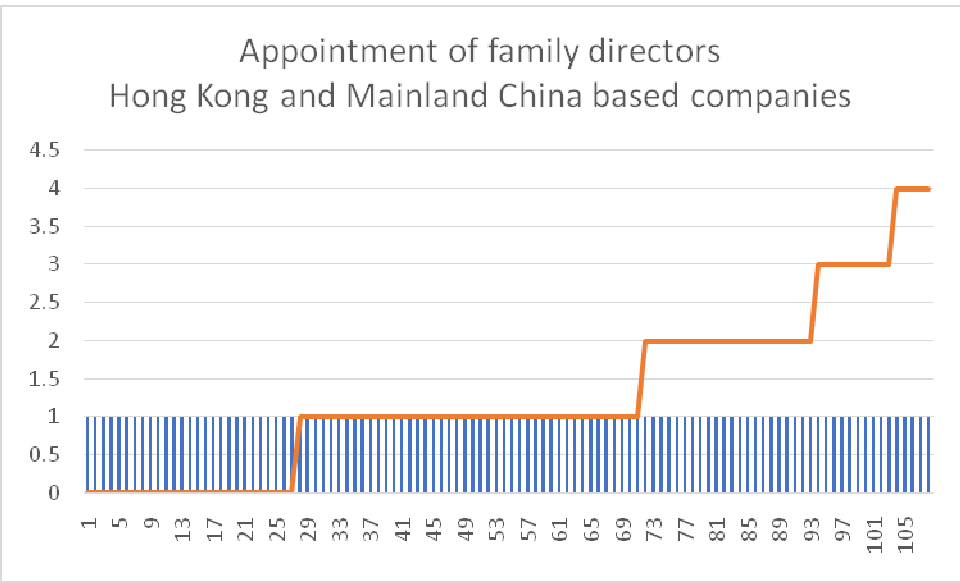


Figure 6: Number of family directors appointed in “Hong Kong and Mainland China”-based companies

According to Figure 5 and Figure 6, many companies appointed family directors. Among those companies which appointed family directors, most of them appointed one to three family directors in Hong Kong-based companies as shown in Figure 5. The influence of family directors was very strong. Compared with Hong Kong-based companies, “Hong Kong and Mainland China”-based companies only appointed one to two family directors as shown in Figure 6. It can be understood that family involvement can influence the ROA. Family directors can act in their best to maximize the interest of the shareholders as well as the family. It is beneficial for them and the shareholders. Family directors have agent responsibility and need to act in the best interest of the shareholders as shown in the conceptual framework. Dharmadasa et al. (2014) discovered a positive relationship between family directors and ROA. In terms of Tobin’s Q and Z-Score, the statistical results reflect that family directors may not be sensitive to Tobin’s Q and Z-Score. From Tobin’s Q, it can be known that investors may not favor the board of directors having too many family directors. Furthermore, family directors may not be concerned about the risk level of the company, and they may ignore the interest of minority shareholders, therefore, it causes the agency problem in this case. In the practical aspect, the board should not have many family directors, because it cannot improve the market value of the company and the solvency of the company. In the long term, the company should attract more investors from the stock market. Financial institutions use the Z-Score as one of the firm financial indicators to predict the risk of the company. They can make suggestions to potential investors in the market. The improvement of the Z-Score is very important for attracting potential investors because the financial resources from family members may be limited and may only serve the short-term development. For long-term development, it is better to enhance the publicity of the share.

6.3 The effect of gender diversity on firm financial performance

Gender diversity is about how many female directors are on the board. An increasing number of female directors can enable the board to obtain opinions from both genders. This study proposed that there is a statistically significant positive relationship between the gender diversity of the board and firm financial performance. For ROA or Tobin's Q or Z-Score as the firm financial indicators, there is no statistically significant relationship. Hypotheses H2a, H2b and H2c were rejected. The appointment of more female directors cannot improve the ROA, Tobin's Q, and Z-Score of a company. Based on the data analysis, some "Hong Kong and Mainland China"-based companies did not appoint any female directors. The influence of female directors may not be significant in this study. In this case, it found no similarity with that of those previous studies which discovered that gender diversity did enhance firm performances in terms of ROA or Tobin's Q. One reason is that the boards of Hong Kong listed companies are dominated by male directors. For example, Ahern and Dittmar (2012) found that increasing the number of female directors cannot enhance Tobin's Q. The study of Ahern and Dittmar (2012) focused on Norway. In Norway, the authority required at least 40% of board members must be female in the listed companies since July 2005. Compared to their study, this study has different results. It is because there are different regulations between Hong Kong and Norway. In their study, there were regulations on the appointments of female directors, but there were no such requirements in Hong Kong. In addition, the culture of Hong Kong and the culture of Norway are different. Unlike Hong Kong, the authority of Norway enforced such requirements as the regulations and required all Norway-listed companies to strictly follow with effective from January 2006. The transition period was two years, and those companies were forced to dissolve if they failed meet the requirements after the transition period. In Hong Kong, the HKEX requires the listed

companies to appoint at least one female director under the "comply or explain" approach. By using Norway as an example, Tobin's Q decreased dramatically after the Norway authority enforced the law in 2006. That study used the cross-sectional method and selects 248 listed companies in Norway. The study period was from 2001 to 2009. Before 2003, 9% of board members were female in Norway-listed companies. According to their study, there was a positive relationship between the number of female directors and Tobin's Q before the enforcement of the regulations of the appointment of 40% of female directors to the board. After the enforcement of the regulation, it caused a negative impact on the relationship between the number of female directors and Tobin's Q. It can reflect the psychological factors of the investors and they are quite sensitive to the changes in regulations. Their study shows that investors are mainly concerned with two issues. One is the massive reorganization of the board to fulfil the regulatory requirements. The other issue is not enough qualified female directors in the market, such as corresponding working experience. The investors may be concerned about the prospects of the company, and it may weaken the market value of the company. They may be concerned about the capability of the newly appointed female directors whether they can lead the company or not, especially most of the boards of listed companies in Hong Kong are dominated by male directors. Some people may consider that the listed companies only perform "window-dressing" to appoint female directors. In other words, the company appoints female directors to comply with the regulation, but the female directors cannot make any influence on the company decision making. The effect of the female director may be a problem. In Norway, it causes negative impact on Tobin's Q due to the weak confidence of the investors.

The reason is justified for that Hong Kong only needs the listed companies to appoint at least one female director under the "comply or explain" approach, because the culture is different between Hong Kong and Norway. According to the Global Gender Gap 2021 ranking by World Economic Forum, Norway ranks number three in the world of gender equality. The statistics are nationally based. The culture of Singapore is much like that of Hong Kong. Singapore ranked number fifty-four in the world in terms of gender equality. The HKEX will not follow Norway to enforce such requirements by regulations, because Norway is a Western culture and has more emphasis on gender equality. Hong Kong has Eastern culture, and the status of men is higher than women according to the Global Gender Gap Report 2021. It can be also reflected in the result of this study, where most of the targeted companies did not appoint any female director, and the influence of female directors is not significant. By Hofstede's cultural dimension theory, it shows as follows:

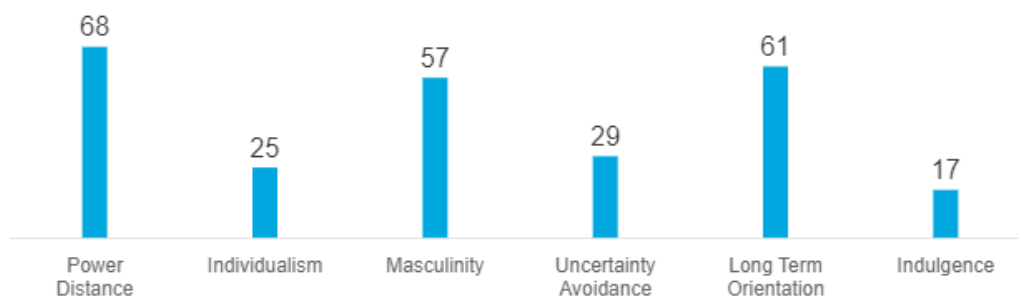


Figure 7: Hong Kong information on Hofstede culture dimension

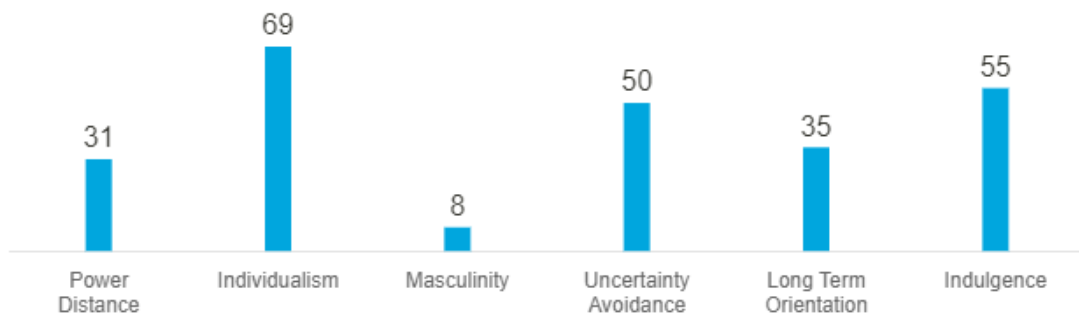


Figure 8: Norway information on Hofstede culture dimension

(Source: <https://www.hofstede-insights.com/>)

For Hong Kong, it is much more masculine than Norway as shown in Figure 7 and Figure 8. Norway is more feasible to adopt the female members in the boardroom. At the policy level, the HKEX or the authority cannot apply the foreign regulation directly. The HKEX or the authority needs to recognize the difference between different countries, such as cultural differences. Furthermore, the legal systems of different countries are also different. By using Norway as an example, the employees have the right to elect one-third of board members. But there is no such regulation in Hong Kong. In this case, the employees in Norway can appoint board members to represent them, and the female directors in Norway may cause an impact on the listed companies. Such female directors seem to be more independent from the senior management and may be more concerned with the interest of other stakeholders, e.g., employees and shareholders. The Norway system protects labor needs, but international investors are emphasized on financial returns. It may create conflicts of interest for Norway listed companies. It causes a decline in the market value of the companies in Norway. In Hong Kong, the picture may be different. The appointment of female directors may be controlled by the senior management, and the impact of

female directors may not significant. The HKEX makes modifications and only requires the listed companies to appoint at least one female director rather than a large portion of female directors in the boardroom. Cabeza-Garcia et al. (2020) found gender diversity-related regulations, as well as policies, are more commonly promoted in countries where governments and companies are characterized by less masculinity and lower power distance. Such cases can be more feasible in Norway, but it may not be the same case in Hong Kong. Accordingly, it is worth performing further study in Hong Kong about the influence of female directors inside the boardroom after the enforcement of the regulation.

On the contrary, Low et al. (2015) found that increasing the number of female directors can improve the ROA. One of the key findings was the positive impact of female directors appeared to be diminished in countries with higher female economic participation and empowerment. Their study concerns in Japan, South Korea, and Singapore. Among the three countries, Japan is the most outstanding performance of the female director. South Korea and Singapore are poorer than Japan. The positive impact of female directors expects to be similar in South Korea and Singapore. The impact may be quite small or even no impact on ROA. This study could not be relevant to investigate any impact of female directors in Hong Kong listed companies on either Hong Kong based or “Hong Kong and Mainland China”-based, like the result of Carter et al. (2010). According to their study, there is no statistically significant relationship between gender diversity and Tobin’s Q. But there is a statistically significant positive relationship between gender diversity and the ROA. In Hong Kong, gender diversity may not be good for the improvement of ROA, Tobin’s Q, and Z-Score, although, the HKEX intends to enhance the percentage of female directors to achieve a positive impact on firm financial performance. The other point

is that the contribution of female directors may not relate to firm financial performance directly. Cha and Abebe (2016) stated that increasing female directors can increase the social activities of the company. Then the company can obtain a better reputation and then stimulate the firm financial performance in long term. This study proved no influence of gender diversity on the firm financial performance.

As shown by the statistics, there were 492 sample cases of Hong Kong-based companies and 108 sample cases of “Hong Kong and Mainland China”-based companies. Within the 492 sample cases of Hong Kong-based companies, there were 447 female directors on the board. Within the 108 sample cases of “Hong Kong and Mainland China”-based companies, there were 79 female directors. Based on these statistics, “Hong Kong and Mainland China”-based companies appointed fewer female directors. Among the 492 sample cases of Hong Kong-based companies, 201 cases did not appoint any female directors to the board, accounting for around 40% of the sample cases. Among the 108 sample cases of “Hong Kong and Mainland China”-based companies, 58 cases did not appoint any female directors to the board, accounting for around 53% of the sample cases. Apparently, many listed companies did not appoint any female directors whether there are Hong Kong-based or “Hong Kong and Mainland China”-based companies.

Figures 9 and 10 below show the number of appointments of female directors:

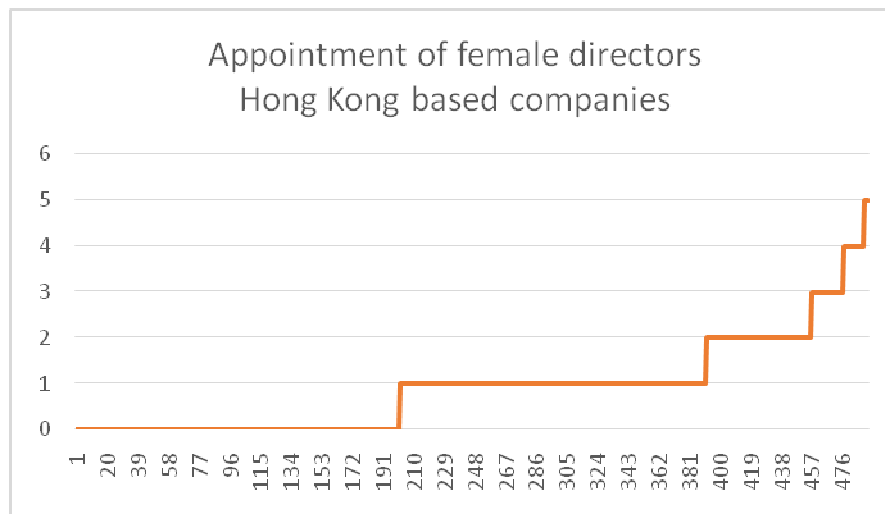


Figure 9: Number of female directors appointed in Hong Kong-based companies

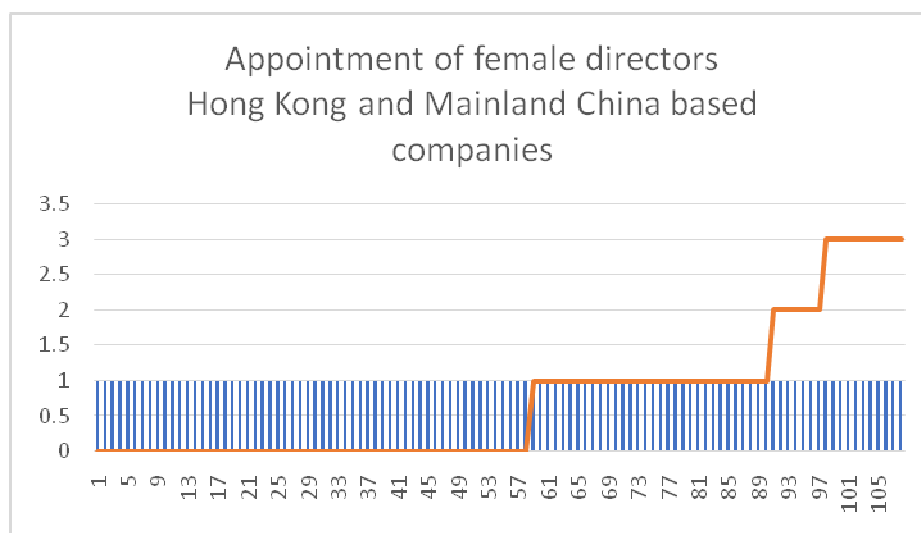


Figure 10: Number of female directors appointed in “Hong Kong and Mainland China”-based companies.

Figure 9 and Figure 10 indicate that many companies did not appoint any female directors in both Hong Kong-based and “Hong Kong and Mainland China”-based companies. Among those companies which appointed female directors, most of them only appointed one female director. The influence of female directors is very weak. Thus, it can be understood that the HKEX wants to amend the listing rules to require

the board to appoint more female directors to achieve board diversity. From a practical perspective, Gillian Meller, president of the HKCGI suggested that listed companies should appoint more female directors. According to the statistics of the HKCGI in March 2021, there is only one female in every seven directors of listed companies, or around 14% are female directors. Therefore, the influence of female directors is very limited. The statistical results of this study are reasonable. HKCGI in March 2021 proposed to amend Hong Kong's Corporate Governance Code to set the target that 30% of the board of directors should comprise female directors. The representation of female directors can enhance the board's diversity. In terms of stewardship, gender diversity of the board can allow better decision-making in the company, and it can assist the stewardship of the board. The diversity of the board can encourage diverse thinking in the decision-making process. Gender diversity is very important, especially as Hong Kong is an international financial center. Hong Kong can follow the Western countries, such as Germany and Italy and have quotas of 30% and 33% respectively for female directors on the board of listed companies. Norway and France set quotas of 40% for female directors on the board of listed companies. In India, at least one board member should be a woman. It is high time for the HKEX to require listed companies to appoint more female directors to enhance board diversity, as this study shows that the influencing power of female directors is quite weak. Under stewardship theory, Hussein and Kiwia (2009) found that the appointment of more female directors can steward the company better and improve firm performance. According to their study, increasing the appointment of female directors can release pressure from regulatory bodies and the government. Under resource dependence theory, the special characteristics of female directors can benefit the board and the firm financial performance. Bilimoria and Wheeler (2000) argued that female members are more actively participating in the discussion process, and they are also

more willing to express their opinions with wisdom than male directors. They may bring more innovative and creative ideas to the board. Due to the fact that very few listed companies in Hong Kong appointed female directors, it is difficult to investigate the impacts of female directors towards the firm financial performance at this moment.

6.4 The effect of CEO duality on firm financial performance

CEO duality is a controversial topic, and it is a control issue in the corporate governance area. Cross-monitoring effects occurred, if the positions of CEO and chairman are taken by two individuals. There is a different impact between CEO duality and without CEO duality on firm financial performance. For ROA or Z-Score as the firm financial indicator, there is no different impact on listed companies with CEO duality and without CEO duality. H3a and H3c are rejected. Regarding Tobin's Q as the firm financial indicator, there is a different impact on the listed companies with CEO duality or without CEO duality, and H3b is accepted. This was unlike the result of Bhuiyan et al. (2010), which suggested that CEO duality has a statistically significant negative relationship with the ROA. Since their study was conducted more than ten years, and the situations are different now, especially after the 2009 financial crisis. The result of this study is quite like that of Shukeri et al. (2012) in that those companies with or without CEO duality have no statistically significant relationships with the ROA. Based on the result of this study, CEO duality does not affect the ROA or Z-Score. In this study, the ROA and Z-Score had no relationships with the listed companies with or without CEO duality. The same person acting as CEO and chairman will not affect the ROA and Z-Score. But there is a different impact on the Hong Kong listed companies with or without CEO duality towards the Tobin's Q. Tobin's Q is the market value of a company and reflects the recognition of investors

regarding the company, therefore, potential investors may not prefer CEO duality in listed companies in Hong Kong. According to Coles and Hesterly (2000), there is a negative relationship between CEO duality and the market value of the company. The same person acting as the chairman and CEO may easily dominate the board's decisions, and it can cause an agency problem and also offend the stewardship theory as the leader of the board. CEO duality is mainly due to the stewardship issue of the board. The same person acting as the CEO and chairman is not good for the company and can be shown by the negative relationship between CEO duality and Tobin's Q. The separation of positions of CEO and Chairman can enhance the monitoring function. Under the stewardship theory, the CEO and chairman are the two most important people leading the company to make decisions and formulate strategy. From a practical perspective, if the chairman and CEO positions are acted by separate individual then they can monitor the performance of each other. Under Hong Kong listing rules, the HKEX strongly recommends that listed companies appoint two different persons to act as the CEO and chairman. The roles and responsibilities of the CEO and chairman must clearly be defined under the Memorandum & Articles of Association of the company. To enhance the confidence of the investors, it is better to minimize CEO duality. The positions of chairman and chief executive officer should be assumed by two separate people to enhance the control and monitoring effect of the board decision making process.

Of the 600 cases, 141 cases are of Hong Kong-based companies with the same person acting as the chairman and CEO, and 349 cases are of Hong Kong-based companies with a different person acting as the chairman and CEO. There were 28 cases of "Hong Kong and Mainland China"-based companies with the same person acting as the chairman and CEO, and 82 cases of "Hong Kong and Mainland China"-based

companies with different persons acting as the chairman and CEO. Among the Hong Kong-based companies, 71.22% of the sample cases had different persons acting as the chairman and chief executive officer. For “Hong Kong and Mainland China”-based companies, 74.55% of the sample cases had different persons acting as the chairman and CEO.

The following is the distribution of CEO duality among Hong Kong-based and “Hong Kong and Mainland China”-based companies.



Figure 11: CEO duality in Hong Kong-based and “Hong Kong and Mainland China”-based companies

As shown in Figure 11, more than 70% of Hong Kong-based and “Hong Kong and Mainland China”-based companies have two different persons acting as the chairman and CEO. Compared with previous studies, the figure has improved a lot. Lam and Lee (2008) found that 41% of Hong Kong listed companies have the same person acting as the chairman and CEO. Twelve years later, only around 30% of Hong Kong listed companies have the same person acting as the chairman and CEO at the same

time. According to Appendix 17 of the Corporate Governance Code, Section A.2 of the Hong Kong listing rules on the positions of chairman and CEO, there are two key aspects to the management of the listed companies. The first is the management of the board and the second is maintaining the day-to-day operation of the business. The key wording from Appendix 14 of Hong Kong listing rules is that:

“There should be a clear division of these responsibilities to ensure a balance of power and authority, so that power is not concentrated in any one individual.”

There should be two separate persons acting as the chairman and CEO to monitor each other. Obviously, the situation has been improved as showed by the results of this study. The different results for ROA, Tobin's Q, and Z-Score are because of ROA and Z-Score are concerned about the internal management of a company. Tobin's Q is the external perception of investors towards the company, and it will affect the market value of the company. The results of this study show different impacts between the company with CEO duality or without CEO duality on Tobin's Q, reflecting the market concerns about the CEO duality issue inside the Hong Kong listed companies.

6.5 The effect of the percentage of independent non-executive directors on firm financial performance

The role of independent non-executive directors is quite different from that of executive directors. Misconduct of the board members may be due to information asymmetry between the board members and shareholders. Independent non-executive directors should ensure that information flows between the board and shareholders. Furthermore, it is expected that independent non-executive directors add value to the business through their professional knowledge and make independent judgments toward the board decision. This can prevent the misconduct of the board members. According to HKCGI, independent non-executive directors need to be the gate keepers of the company and prevent the opportunity of misconduct of the board members. The Guidance Note of HKCGI states that independent non-executive directors should not rely on other people in the exercise of their duties. They should not abrogate their responsibilities completely. Furthermore, they should not permit one individual to dominate and control them so that independent non-executive directors can make their decisions freely without any threat from other board members. The responsibility of independent non-executive directors is not to focus on the profitability of the company. According to the Corporate Governance Guideline of the HKEX, the function of independent non-executive directors is expected to play a crucial role in achieving good corporate governance. They should provide independent oversight of the company affairs and raise the constructive challenge to the executive directors on the board. They can safeguard the interests of the shareholders as well as other stakeholders. This study proposes that there is a statistically significant positive relationship between the percentage of independent non-executive directors and firm financial performance. For ROA or Tobin's Q firm financial indicators, there is no statistically significant relationship similar with the

result of Johl et al. (2015). So H4a and H4b are rejected. Regarding Z-Score as the firm financial indicator, it has a statistically significant positive relationship, and H4c is accepted. The percentage of independent non-executive directors can reflect the independence of the board. Traditionally, many independent non-executive directors are thought to enhance the board's performance which can be reflected by Z-Score. According to the statistics, such a deduction may not be made. The result of this study is the same as that of Johl et al. (2015), in which the board's independence has no statistically significant relationship with the ROA. However, Johl et al. (2015) stated that increasing the number of independent non-executive directors can enhance the quality of financial reporting and accounting transparency. The Z-Score has a statistically significant positive relationship with the percentage of independent non-executive directors. The result of this study matches Bernini et al. (2013) findings in that increasing the number of independent non-executive directors can have a positive impact on the Z-Score. This may be due to that independent non-executive directors exert monitoring and control on the company in different aspects, and their focus is not only on profitability. The firm financial indicator of Z-Score can be used to predict whether a company is on the brink of insolvency, where liabilities are greater than the assets. The result reflects that the role of the independence of non-executive directors is enhancing the monitoring effect rather than enhancing profitability. This can help to understand the reason why the HKEX requires the listed companies to appoint at least three independent non-executive directors to the board representing one-third of the board to monitor the performance of executive directors. The HKEX further intends to enhance the quality of independent non-executive directors through the rotation of appointments. It can safeguard the interest of the shareholders, especially minority shareholders. The spirit of the listing rules' requirements regarding the appointment of independent non-executive directors is to

protect shareholders' rights. Furthermore, the rotation appointment can also prevent the excess influence of the family.

Under the agency theory, independent non-executive directors also have a responsibility as an agent to monitor the board performance on behalf of shareholders. They should act as the watchdogs and give their professional opinions on the company's strategies and policies. They should know their responsibilities clearly and appropriately use their power. There is a positive relationship between the number of independent non-executive directors and Z-Score. The independent non-executive directors can assist the board to monitor the business strategy and avoid risky projects. Annuar (2014) found that the role of independent non-executive directors should be more concerned for the strategy formation process, but they may not participate in the content of the strategy. They need to ensure the selection and formation of strategy under the company procedures. They need to ensure that strategy formation takes place in a transparent and fair environment. One example is to select vendors offering the lowest price and not select vendors who are the friends of board members. The Z-Score can improve if the company appoints more independent non-executive directors. The board needs to safeguard the interests of the shareholders and prevent too risky investments.

Under the resource dependence theory, the Z-Score can increase according to the number of independent non-executive directors. This may be due to that independent non-executive directors bring their distinct resources to the company thereby enhancing the monitoring effect. The contribution of independent non-executive directors can improve firm financial performance because of their personal professional knowledge and reputation as stated in Muchemwa et al. (2016).

According to the guidance for independent non-executive directors, the HKIOD, the role of independent non-executive directors is as follows:

“A director possesses an independent attitude if he is aware of and understands the interest around him but remembers that his actions and his vote are in the service of his duty owed to the members of the company as a whole and not a particular interest. So long as he acts in good faith and with integrity, a director will possess an independent frame of mind in addition to generally fulfilling his duty as a director. (N.B. There are certain occasions when the independent non-executive director is called on specifically to protect the interest of minority shareholders.)”

The above text shows the importance of independent non-executive directors in the corporate governance area. According to Zhang et al. (2018), increasing the number of independent non-executive directors can stabilize stock returns. In this aspect, one can identify whether independent non-executive directors have played the role to achieve financial returns. But this study could not find any statistically significant relationship between the percentage of independent non-executive directors and Tobin's Q. However, this study can confirm the monitoring or safeguarding role of independent non-executive directors on the board, and it can facilitate firm financial performance. Independent non-executive directors may enhance the protection of minority shareholders to prevent the company from investing in risky projects that affect the company's solvency. The result of this study proved that the role of independent non-executive directors should monitor the solvency and risk exposure of the listed companies in Hong Kong. Apparently, the role of independent non-executive directors is to safeguard the interests of shareholders like a “watchdog”.

In this study there were 492 sample cases of Hong Kong-based companies and 108 sample cases of “Hong Kong and Mainland China”-based companies. In the 492 sample cases of Hong Kong-based companies, there were 1,722 independent non-executive directors on the board. In the 108 sample cases of “Hong Kong and Mainland China”-based companies, there were 345 independent non-executive directors. Based on these statistics, “Hong Kong and Mainland China”-based companies appointed fewer independent non-executive directors. Among the 600 sample cases, only two cases appointed two independent non-executive directors and those two cases are “Hong Kong and Mainland China”-based companies. They may not comply with the requirements of Hong Kong listing rules concerning the number of independent non-executive directors. The reason may be that the company needs time to seek appropriate professionals to fill up vacancies in the case of resignations of independent non-executive directors during the financial year. But most companies do fulfil the requirement of Hong Kong listing rules to appoint at least three independent non-executive directors representing one-third of the board. More independent non-executive directors can reduce the agency costs of the company and assist the board to achieve better firm financial performance under the control of the liquidity of the companies, such as the Z-Score. It matches the results of the study of García-Sánchez and Martínez-Ferrero (2016). According to their study, the independent non-executive can enhance the Z-Score through the disclosure of the risk management policy of the company. In Hong Kong, the HKEX requires listed companies to disclose the risk management policy in the ESG report.

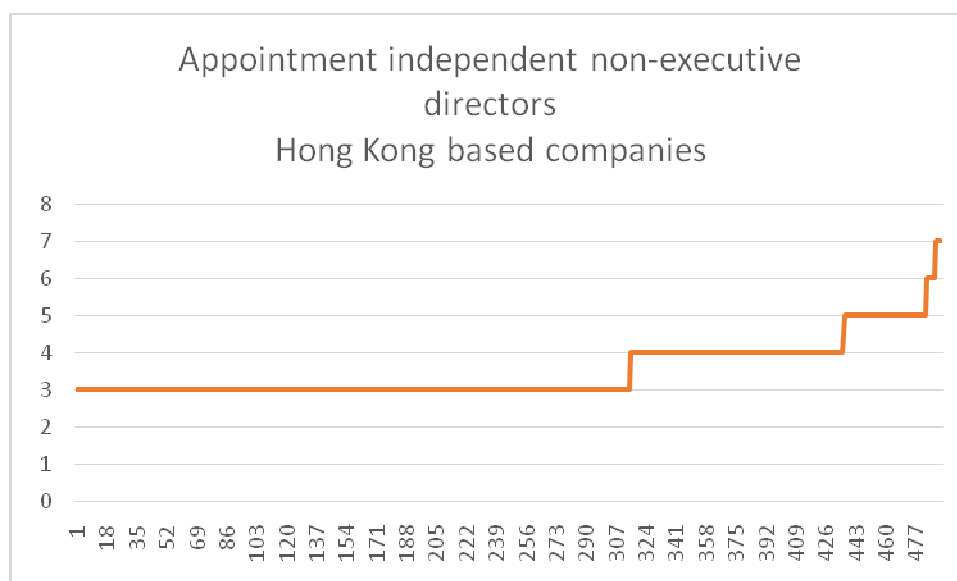


Figure 12: Number of independent non-executive directors appointed in Hong

Kong-based companies

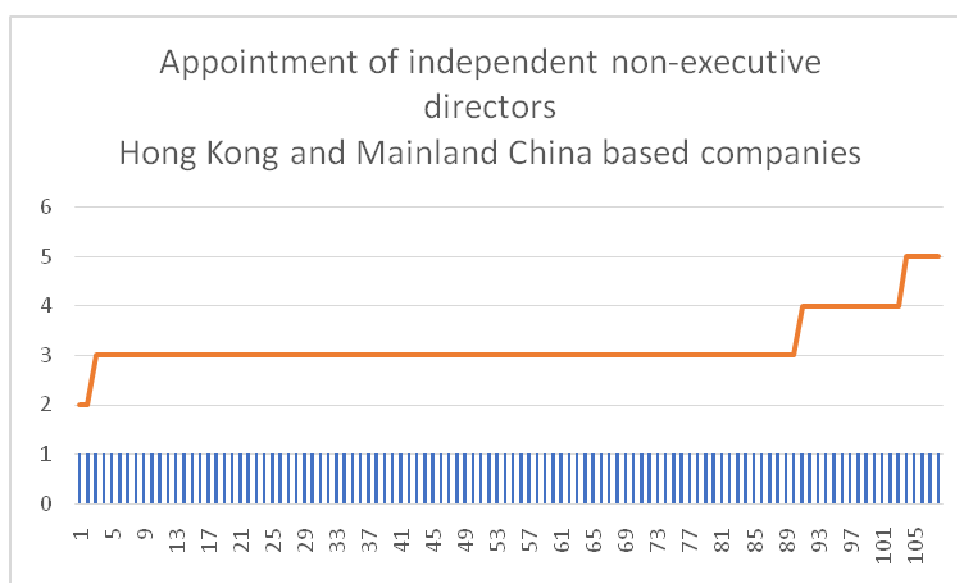


Figure 13: Number of independent non-executive directors appointed in “Hong Kong and Mainland China”-based companies

Figure 12 shows that Hong Kong based companies have a higher intention to appoint more independent non-executive directors to enhance the board’s independence and obtain more independent advice. “Hong Kong and Mainland China”-based companies

are most likely to fulfil the minimum requirements of appointing three independent non-executive directors as shown in Figure 13. The statistical results of this study suggested that the function of independent non-executive directors is not to focus on the profitability and returns of the company. Their most important role is to monitor the board's compliance with the regulations and ethics standards during the decision-making process. It is very important to protect the interests of shareholders, and the decision-making must not put the company at the expose of too many risks. There is a positive relationship between the percentage of independent non-executive directors and Z-Score. Regarding ROA and Tobin's Q, there is no relationship with the percentage of independent non-executive directors. From a practical perspective, increasing the percentage of independent non-executive directors can enhance the confidence of the existing shareholders and potential investors. It represents higher board independence. It is very important for corporate social responsibility and to prevent the board from exposing the company to too many risks. Therefore, there are statutory requirements regarding the number of independent non-executive directors under Hong Kong listing rules, because these can protect the rights of minority shareholders and keep a balance of the interests of all stakeholders including vendors, customers, employees, and the government.

6.6 The effect of the number of board meetings on firm financial performance

Board members need to meet to discuss the strategies of the company because more board meetings can generate better decisions and achieve higher firm financial performance. Appendix 17 of this study contains information about the functions of board meetings. This study proposes that there is a statistically significant positive relationship between the number of board meetings and firm financial performance. Previous research studies found a positive relationship, such as Lipton and Lorsch

(1992) who found a positive relationship between the number of board meetings and firm financial performance. This study does not have the same result as Lipton and Lorsch (1992). According to this study and the three firm financial indicators, i.e., ROA, Tobin's Q and Z-Score, H5a, H5b and H5c assert that there is no statistically significant relationship with the number of board meetings. Compared with the results of Lipton and Lorsch (1992), their study performed in the US and the director remuneration links up to the time spent on the company, such as the number of board meeting attendance. In this case, it is a great incentive for the board members to attend the meeting. In Hong Kong, the director's remuneration is fixed in the appointment contract. It may lack incentive for them to attend the board meeting. Increasing the number of board meetings cannot enhance the value of the three firm financial indicators. Increasing the number of board meetings may allow the board members to discuss the corporate issues and then enhance the stewardship role of the board. But this is not the case in Hong Kong.

From a practical perspective, most of the targeted companies only hold around 10 board meetings during a financial year. According to the disclosures in their annual reports, meetings are mainly used to discuss investment decisions and other general business of the company. In some targeted companies, the number of board meetings was more than 30 in the financial year due to the disposal of shares by the controlling shareholders, and such ownership change shall be disclosed and shown in the notes of financial statements of the annual reports. These companies needed more meetings to discuss the transactional matters and fulfil many documentary requirements of the regulatory bodies, such as the HKEX and the SFC. In this case, the number of meetings will increase dramatically. Generally, the number of board meetings lies between 4 and 20 as shown in Table 13 (page 223), because the Hong Kong listing

rules require listed companies to hold at least four board meetings every financial year. Most listed companies in Hong Kong only fulfil the statutory requirement. It is not the case in Hong Kong that increasing the number of board meetings can improve the firm financial performance. Practically speaking, there is no meaning to holding too many board meetings as it may only waste resources, such as the time of the senior management, rental expenses of the venue, and other related expenditures. Furthermore, the time of board meetings needs to be set so that the maximum number of board members can attend. It may not be an easy task, especially if the number of board members increases. Furthermore, it can also prove that the number of board meetings is not related to the firm financial performance. The result of this study is not similar to that of Lawler et al. (2002) about the positive relationship between the number of board meetings and the ROA. The result of this study also contradicts the results of Hanh et al. (2018) about the negative relationship between the number of meetings and the ROA. One cannot use the number of board meetings to conclude whether the increasing number of board meetings can have a positive or negative impact on the firm financial performance. A board meeting may involve many issues about corporate strategies, and it depends on the quality of the board meeting rather than the quantity of the board meetings. Under the stewardship theory, the board of directors should steward the board meetings and make good decisions as well as formulate the strategies of the company. The number of board meetings may not directly cause any impact on the firm financial performance. The quality of board decisions is more important than the frequency of board meetings. The key points of stewardship theory are to build trust with the shareholders and achieve cohesiveness with the managerial staff of the company. The number of board meetings in the annual report may only present the increase the number of meeting times so it may be difficult to conclude whether the objectives of stewardship theory can be achieved.

The result of this study shows the number of board meetings is no statistically significant relationship with any firm financial indicator.

Figure 14 below shows the number of board meetings of targeted companies.

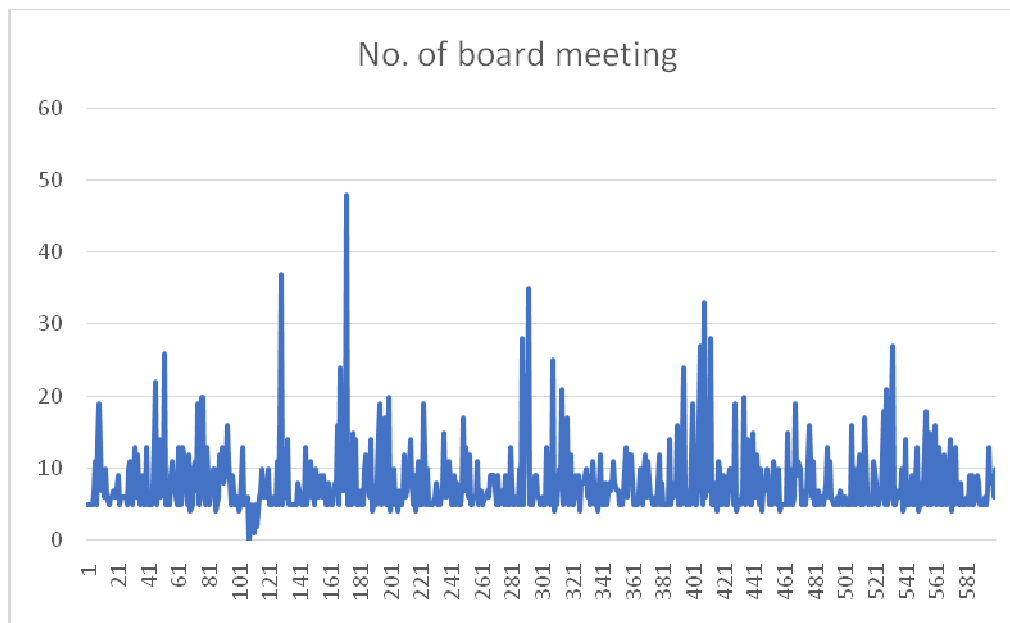


Figure 14: Number of board meetings of targeted companies

As shown in Figure 14, the number of board meetings fluctuates in the targeted companies. But it shows that all listed companies strictly abide by the listing rules and hold at least four board meetings per financial year. The frequency of board meetings may depend on the number of significant decisions made during the financial year. This study discovered that the highest number of board meetings was 48 in one sample case. The major reason was the sales of the company and the existing board of directors holding many meetings to discuss such issues as stated in the corresponding annual report and announcements. After the approval and completion of the transaction, the new board of directors also needed to hold a certain number of board meetings to discuss some issues. In this case, the number of board meetings cannot easily be used to conclude whether it is related to the firm financial performance or

not. But the purpose of board meetings is to focus on some important issues of the company, e.g., mergers and acquisitions. Generally, listed companies need to follow Hong Kong listing rules and hold at least four board meetings during a financial year. The number of board meetings of the targeted companies is shown in the following Table 13:

No. of board meeting	No. of cases
0	1
1	1
2	1
4	18
5	217
6	83
7	53
8	38
9	35
10	33
11	26
12	18
13	17
14	12
15	7
16	7
17	4
18	2
19	7
20	4
21	2
22	1
23	1
24	2
25	1
26	1
27	2
28	2

33	1
35	1
37	1
48	1

Table 13: Number of board meetings

Table 13 shows that one-third of the sample cases hold five board meetings during a financial year, which is a little bit higher than the statutory requirement. Three cases had just completed the initial public offer process, and the number of board meetings was lower than the requirement because the financial year was only several months.

For number of board meetings, there is no relationship with the firm financial performance in Hong Kong. According to Hanh et al. (2018), the quality of board meetings is much important than the number of board meeting. If board members acted just liked a rubber stamp and lacked the responsibilities to optimize the strategy for the best interests of shareholders; the result of the strategy cannot achieve good firm performance as reflected in the firm financial indicators. In some situations, the unnecessary board meeting may even waste the resources of the company. The result of this study supports the findings of Aryani et al. (2017) that the number of board meeting has no relationships with the firm financial performance. It is because most of the boards of the listed companies only follow the minimum requirements of the regulatory bodies about number of board meeting.

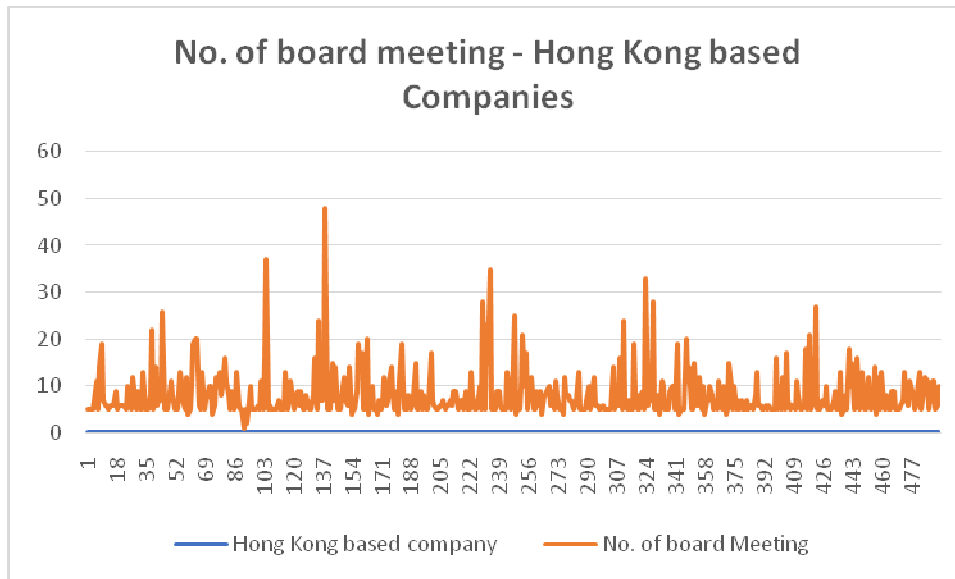


Figure 15: Comparison of the number of board meetings between Hong Kong-based companies and “Hong Kong and Mainland China”-based companies

Regarding the number of board meetings between Hong Kong-based companies and “Hong Kong and Mainland China”-based companies, the trend is quite similar because both types of the companies need to hold the minimum number of board meetings according to Hong Kong listing rules. There is no difference between the

two types of companies as they need to follow the same regulation in Hong Kong. The number of board meetings shows that most listed companies only follow the statutory requirements, i.e., at least four board meetings as shown in Figure 15. Some of the newly listed companies need not fulfil such requirements as their financial year is less than twelve months. Generally, most listed companies hold around five board meetings during a financial year. This can further support that the number of board meetings may not relate to the firm financial performance.

6.7 The effect of the education level of board members on firm financial performance

In the knowledge era, members with higher educational qualifications may bring more creative and innovative ideas to the board. There is a perception that increasing the education level of board members can have a positive influence on the firm financial performance. This study proposes that there is a statistically significant positive relationship between the education level of board members and firm financial performance. Such a relationship is asserted by a certain number of past studies. Erhardt et al. (2003) found a positive relationship between the educational level of board members and ROA. Compared with this study, the study of Erhardt et al. (2003) used the professional qualification of the board members as the independent variable, while this study used academic qualification as the independent variable. It may obtain different results. For both professional and academic qualifications, the board can obtain more diverse opinions from board members with high qualifications (Cox & Blake, 1991), and these professional and academic qualifications can improve the organizational performance. The study of Cox and Blake (1991) focused on the decision-making process to improve the performance of the company. According to the statistical results of this study, there is no statistically significant relationship

between the education level of board members and the ROA. There is also no statistically significant relationship between the education level of board members and Z-Score in this study. So H6a and H6c were rejected. This agrees with the research results of Mahadeo et al. (2011). According to their study, firm financial performance not only depends on the education level of the board members, but many other personal factors of the board members will affect firm financial performance, e.g., working experience in the corresponding industry and personal social network. In this case, board members with master's degrees or above may not assist the company to improve its ROA and Z-Score. Past studies, such as Carpenter and Westphal (2001), found that board members with higher qualifications can facilitate the board's effectiveness and improve firm financial performance. Their study evaluated the quality of the decision-making. Through the decision of management, it expects the firm financial performance can improve. But the result of this study only shows a statistically significant positive relationship between Tobin's Q and the education level of board members. So H6b was accepted under Tobin's as the firm financial indicator. Investors may consider the high educational level of board members to represent the high quality of the board and strengthen their confidence towards the board. The market expects the high-quality board can decide on the sustainable development of the company. They may have more trust on the board which will enhance the market value of the company. ROA and Z-Score are related to the internal management of the board. The education level of board members has no statistically significant relationship with ROA or Z-Score. It may reflect that the actual working experience of the board members is much important than academic qualification.

Under stewardship theory, the board members should lead the company to make good strategies thereby improving the firm financial performance. In this study, only

Tobin's Q was found to be positively related to firm financial performance. It reflects that potential investors may have more concerns about the educational background of the board members, because they may think that more highly educated board members can enhance firm performance. This may be reflected in the market value of the company. In other words, investors believe that highly educated members can lead the company better under stewardship theory. More highly educated members can garner more trust from investors. Under resource dependence theory, another role of board members is to bring more resources to the company. It may also enhance the confidence and trust of investors. One example is Jalbert et al. (2002) who found CEOs with Master of Business Administration degrees from reputable universities can enhance firm financial performance. Their study tries to investigate the impact of the CEO with a reputable Master of Business Administration degree and those CEOs with no reputable Master of Business Administration degree on the firm financial performance. This study only considers the board members with master's degrees. Sauaia and Castro (2002) stated that Tobin's Q is the psychological factor to measure investor reaction to some issues of the company, such as changes in board structure and the company's prospects. It can provide some useful insights about the management of the company to consider employing the high qualification board members. The result of this study explained the reason that the education level of board members influences Tobin's Q.

The following Figures 16 and 17 show the education level of board members:

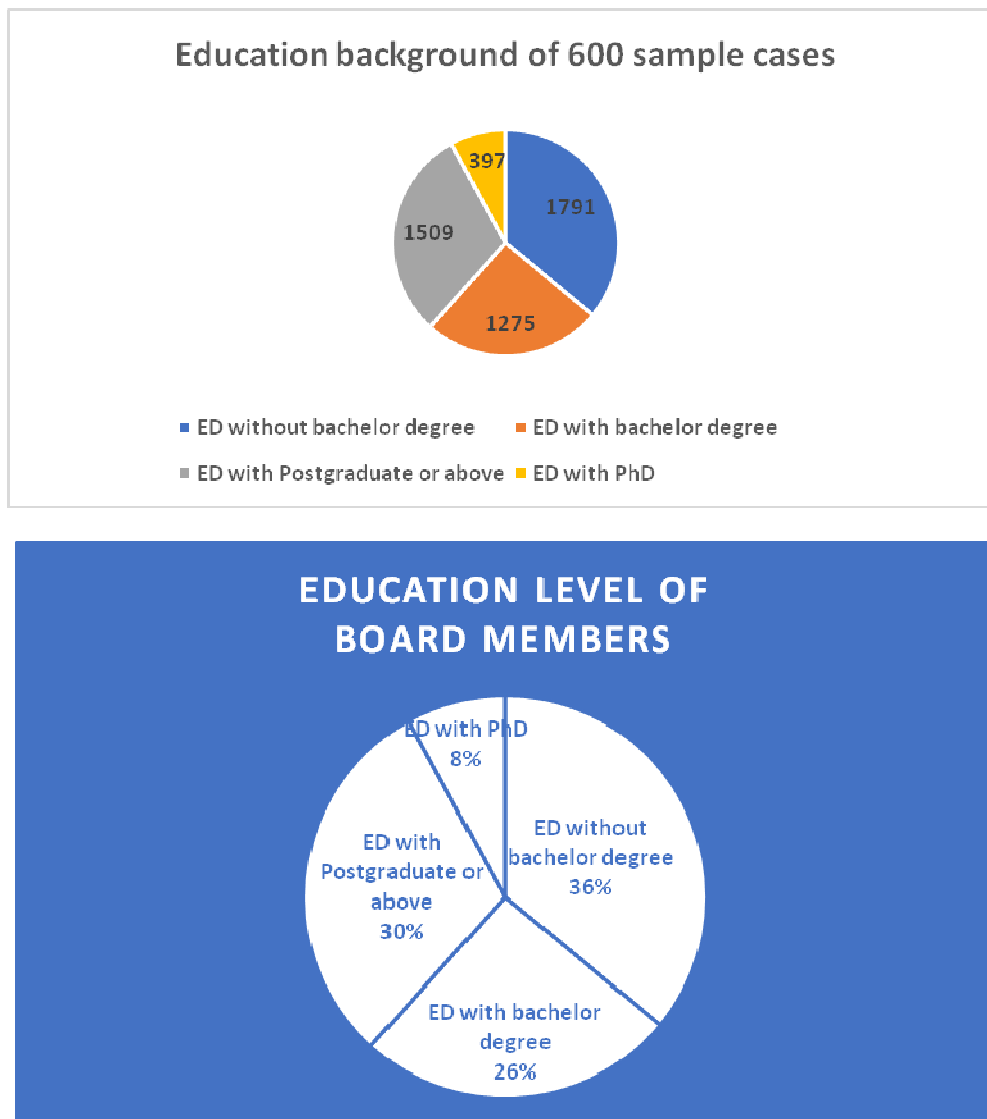


Figure 16: Education background of the board members

Figure 16 shows that most of the board members have a bachelor's degree education. According to the statistical results, the total number of board members in the 600 cases is 4,972 and 1,791 out of 4,972 board members have no bachelor's degree. This means that around 36% of the board members have no bachelor's degree. They may use their professional qualifications and rich working experience as the basis to make contributions to the company and enhance the firm financial performance. It can be understood why the education level of board members may not have a statistically

significant relationship with firm financial performance.

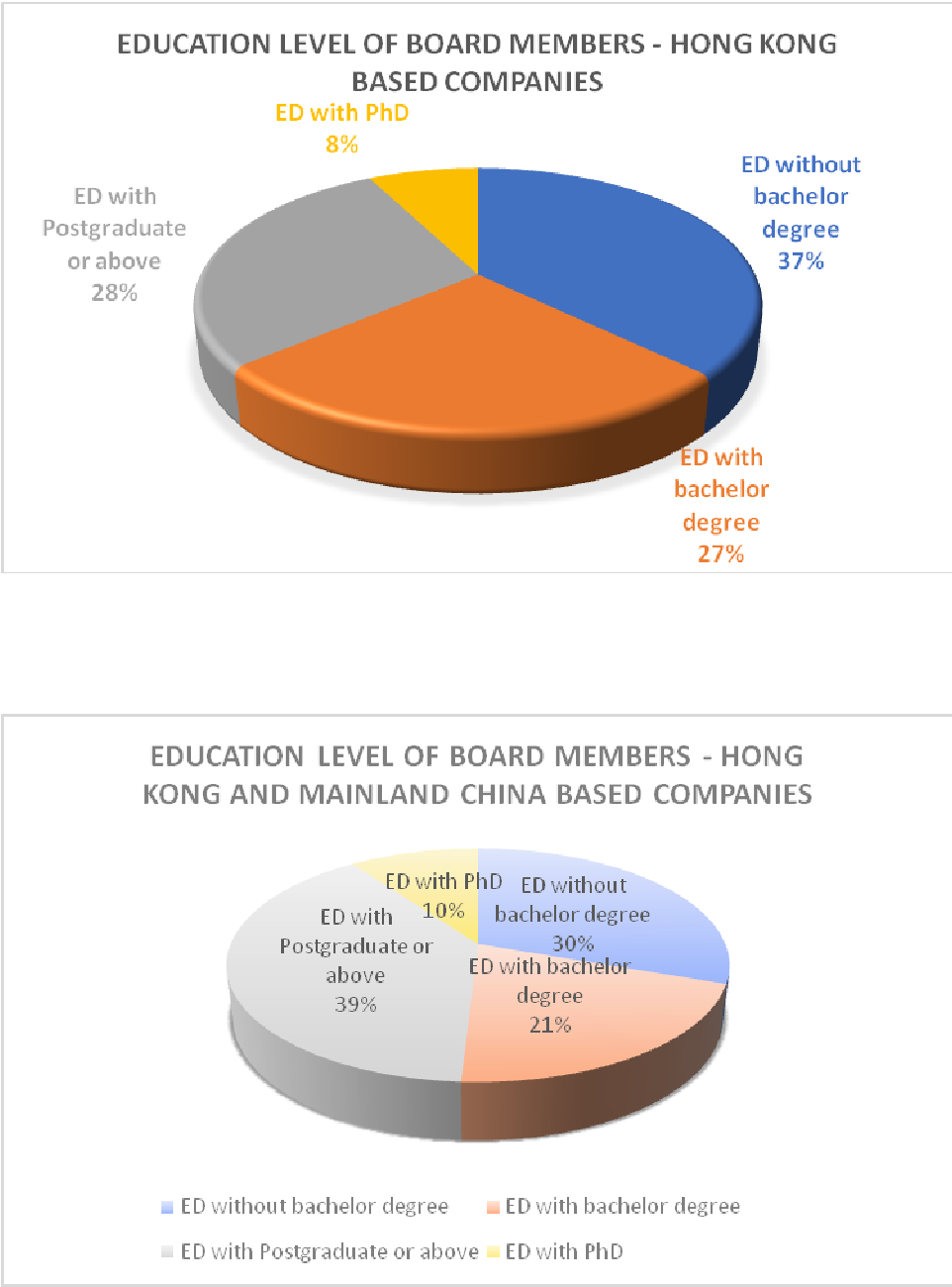


Figure 17: Comparison of the education level of board members between Hong Kong-based companies and “Hong Kong and Mainland China”-based companies

Comparing Hong Kong-based companies and “Hong Kong and Mainland China”-based companies, the education level of board members is quite similar as shown in Figure 17. From a practical perspective, the company cannot only consider

appointing board members with higher education levels. One needs to consider other factors, such as working experience, social network, professional qualification, and personal characteristics, especially to improve the profitability and returns to the shareholders (Kim, 2005). Becker (1964) stressed that the skills gained from working experience and skills acquired from continued training of board members are much more important than academic educational qualifications. Becker (1964) provided reasons for that the number of higher education board members cannot improve the firm financial performance, such as ROA and Z-Score. For ROA and Z-Score, they involve in the internal operation of the company. In this case, the experienced board members may be more important than high qualified board members as shown in the result of this study, because the high qualified board members may not have so rich and outstanding experience in the industry. In the practical aspect, the increasing appointments of members with higher education can enhance the trust and confidence of investors which can be reflected by the positive relationship between Tobin's Q and the education level of board members. In Hong Kong, the highly education board members can give confidence to existing and potential shareholders; however, it may have the substantial effects to the daily business operation.

6.8 The effect of board size on firm financial performance

Board size may be another characteristic of the board, and the board size may increase according to the firm size. This study proposes that there is a statistically significant positive relationship between board size and firm financial performance. Based on the statistical results of this study, only board size has a statistically significant positive relationship with Tobin's Q. There is no statistically significant relationship between board size and ROA or Z-Score. So H7a and H7c are rejected. Increasing the board size may only have a statistically significant relationship with Tobin's Q. H7b is

accepted and the board size can assist the company to obtain a better Tobin's Q. From the agency theory, the results are similar to the results of the study of Seti-Atmaja (2008). According to his study, there is a positive relationship between board size and Tobin's Q. If Tobin's Q increases, it has a psychological effect on investors. The investors consider that more professionals joining the board will stimulate the Tobin's Q of the company, and the result is the same as that of Mohapatra (2017). Compared with Tobin's Q, ROA and Z-Score depend on the capability of the board members and the way how they can lead the board. The board size may not be the major influencing factor to stimulate their values.

6.9 The moderating effect of board size on board characteristics and firm financial performance

Board size is the moderating variable of this study, and it investigated any moderating effect of the board size towards the relationship between dependent variables and independent variables.

6.9.1 The moderating effect of board size on family involvement and firm financial performance

The board size moderates the relationship between family involvement and firm financial performance with a negative impact. For ROA or Z-Score as the firm financial indicator, there is no statistically significant relationship. H8a and H8c are rejected. There is a statistically significant relationship between board size, percentage of family directors and Tobin's Q. H8b is accepted. Board size have a negative influence on the relationship between Tobin's Q and family involvement. An increase in board size may result in diminishing the impact of family members on Tobin's Q. Tobin's Q value matches the results of the study of García-Ramos and García-Olalla (2011). In other words, if board size increases, it can weaken the influence of the family members on the board, because more outside directors can appoint and then monitor the performance of the family members. It may enhance Tobin's Q as the investors may have more trust on the board as the family members cannot dominate the board's decisions. It is not the same result as Prevost et al. (2002). It may be due to different firm financial indicator. Their study evaluated the moderating effect of board size towards the relationship between the family involvement and leverage level of the company. According to their study, increasing the board size can introduce more family members and then more funding, and it can reduce external loans. However, this is different from this study. From a practical perspective, the

company can increase the board size and appoint more outside board members with different backgrounds. It can enhance board diversity through the reduction of the influencing power of the family members. Tobin's Q can improve for a better corporate image.

6.9.2 The moderating effect of board size on CEO duality and firm financial performance

The board size moderates the relationship between CEO duality and firm financial performance with a negative impact. For Tobin's Q or Z-Score as firm financial indicators, there is no statistically significant relationship. H9b and H9c are rejected under these two cases of firm financial indicators. In other words, board size cannot have any statistically significant impact on the relationship between the Tobin's Q or Z-Score and CEO duality. It is the same result as Lehn et al. (2004) and Dalton and Dalton (2005). It is unlike the result of Gill and Mathur (2011). It may be due to their study focusing on the manufacturing sector. This study does not focus on any specific industry and selects the targeted companies randomly from the HKEX. For ROA as the firm financial indicator, there is a statistically significant negative relationship. In other words, a larger board size will reduce the effect of CEO duality on ROA. It may be due to the larger board size that can introduce more board members and monitor the issue of CEO duality as stated in Lehn et al. (2004).

6.9.3 The moderating effect of board size on gender diversity and firm financial performance

The board size moderates the relationship between gender diversity and firm financial indicator with a positive impact. For ROA or Tobin's Q or Z-Score as firm financial indicators, there is no statistically significant positive relationship. H10a, H10b and

H10c are rejected under all three cases of firm financial indicators. In other words, board size cannot have any statistically significant impact on the relationship between firm financial indicators and the percentage of female directors. Board size cannot influence the firm to appoint more female directors and then improve the firm financial performance. From the statistical result, most of the board members in Hong Kong listed companies are still male. According to the statistics of HKCGI in 2021, only 14% of listed companies in Hong Kong have appointed female directors to the board. It expects that the influence of female directors may be quite weak. It is reasonable that an increase in board size will not cause an increase in the number of female directors under the current situation because the influencing power of female directors is quite weak in Hong Kong. From a practical perspective, it is better to increase the number of female directors to enhance the board's diversity which is also the future direction of the HKEX. In the future, the HKEX will have the intention to require the appointment of female directors. It may be the "comply or explain" approach. In other words, the listed companies in Hong Kong need to comply with the requirement to appoint female directors. If they cannot do so, they need to explain their difficulty regarding the appointment of female directors. The result of this study is similar to the findings of Bonn (2004) and the board size is no moderating influence. Unlike the findings of Erhardt et al. (2003), they found increasing board size can provide more opportunities for female directors on the board. It can improve the firm financial performance. The study of Erhardt et al. (2003) only focused on the large corporations in US listed market. This study selected different sizes of listed companies in Hong Kong. In this case, the result may be different.

6.9.4 *The moderating effect of board size on the percentage of independent non-executive directors and firm financial performance*

The board size moderates the relationship between the appointment of independent non-executive directors and firm financial performance with a positive impact. For ROA as the firm financial indicator, there is a statistically significant positive relationship. H11a is accepted. For Tobin's Q or Z-Score as the firm financial indicator, there is no statistically significant relationship. H11b and H11c are rejected. In this case, board size can have a positive impact on the relationship between the percentage of independent non-executive directors and the ROA. An increase in board size may result in the appointment of more independent non-executive directors to the board and then facilitate the board's performance, i.e., ROA. But board size cannot influence the relationship between the percentage of independent non-executive directors and Tobin's Q or Z-Score. From a practical perspective, increasing the board size can enhance the relationship between the percentage of independent non-executive directors and the ROA. A company can increase its board size and then increase the percentage of independent non-executive directors with different backgrounds. The independent non-executive directors can exert the monitoring effect of the board and enhance the quality of the decision. This can enhance the ROA of the company. It is similar to the result of Becht et al. (2005) and Bebeji et al. (2015). The increase in board size can facilitate the relationship between board independence and ROA. But it is a different result from Ramdani and Wittleloostuijn (2010). Their study focused on the developing market, e.g., Indonesia, Malaysia, and Thailand. Those markets may be quite different from the Hong Kong stock market.

6.9.5 *The moderating effect of board size on the number of board meetings and firm financial performance*

The board size moderates the relationship between the number of board meetings and firm financial performance with a positive impact. According to the result of this study, board size cannot cause any statistically significant relationship between the number of board meetings and any of the firm financial indicators, i.e., ROA, Tobin's Q, and Z-Score. H12a, H12b and H12c are rejected. From a practical perspective, the company cannot improve the firm financial performance through an increase in board size. It is similar to the result of Shakir (2008) and the board size cannot exert a moderate effect on the relationship between the number of board meetings and ROA as well as Z-Score. As shown in Table 13 (page 223), most of the listed companies in Hong Kong only follow the minimum requirement of the listing rule to hold four meetings in the financial year. For Tobin's Q, the result of this study is not the same as the findings of Boone et al. (2007) and Vafeas (1999). The study of Boone et al. (2007) focused on investigating the board characteristics of the first ten years after the firm's IPO. This study does not impose this restriction. The study of Vafeas (1999) focused on the relationship between the frequency of board meetings and the amount of operating activity. He used the event study methodology, and it was not the same as this study. The increasing board size cannot cause any influence on the number of the board meeting and Tobin's Q in this study.

6.9.6 *The moderating effect of board size on the education level of board members and firm financial performance*

The board size moderates the relationship between the education level of board members and firm financial performance with a positive impact. For ROA or Z-Score as the firm financial indicator, there is no statistically significant relationship. H13a

and H13c are rejected under these two cases of firm financial indicators. The board size does not have an impact on the appointment of more board members with master's degrees or above under the ROA and Z-Score as the firm financial indicator. For Tobin's Q, board size moderates the relationship between the education level of board members and Tobin's Q with a positive impact. H13b is accepted. The increase in board size can introduce more high qualified board members with master's degrees or above. It can strengthen the confidence of the shareholders and attract potential investors. It can enhance the market value of the company, i.e., Tobin's Q. The result of Tobin's Q is similar to the results of Ingley and Van Der Walt (2001) and Boone et al. (2007). For ROA and Z-Score, the result of this study shows that the increase in board size cannot exert any influence on the relationship between the number of higher educated board members and these two firm financial indicators.

6.10 Summary of the results of the hypothesis testing

In this section, it provides a summary of the results of the hypothesis testing and provides an overview of relationship between board characteristics and firm financial performance.

6.10.1 Summary of the results between independent variables and dependent variables

After concluding the results of all hypotheses, it was found that gender diversity and the number of board meetings did not have any statistically significant relationship with firm financial indicators, such as the ROA, Tobin's Q and Z-Score. In Hong Kong, the portion of female directors is still quite low, and their influence may not be significant to the firm financial performance. Apart from gender diversity, the number of board meetings also has no statistically significant relationship with firm financial

performance. An increase or decrease in the number of board meetings will not affect the firm financial performance because most of the targeted companies hold five to seven board meetings in a financial year. Only if there are some abnormal events, such as a merger and acquisition, will the company hold more board meetings. The number of board meetings will not have any significant influence on the firm financial performance in Hong Kong.

6.10.2 Summary of the results between moderating variable, independent variables and dependent variables

Regarding the moderating effect of board size, board size has no statistically significant relationship with gender diversity and the three firm financial indicators. Board size has no statistically significant relationship with the number of the board meeting and the three firm financial indicators. An increase or decrease in board size will not exert any influence on the appointment of female directors to improve the firm financial performance. Furthermore, it is the same as the number of board meetings. An increase or decrease in board size will not exert any influence on the number of the board meeting to improve the firm financial performance. In other words, the change in board size will not influence the companies to change the number of female directors or number of board meeting to enhance the firm financial performance.

6.10.3 Summary of the results between control variables, independent variables and dependent variables

Regarding ROA as the firm financial indicator, there is a statistically significant positive relationship with firm size. Regarding Tobin's Q or Z-Score as the firm financial indicator, there is a statistically significant negative relationship with firm size. Firm size is another critical issue that affects firm performance. Firm size can enhance the ROA and the result is similar to some past studies, such as Campbell and Minguez-Vera (2008). According to their study, firm size has a statistically significant positive relationship with firm size and ROA. Firm size may affect the performance of the company because larger firms may possess more resources for development. But Tobin's Q and Z-Score have a statistically significant negative relationship with firm size. The increase in firm size will decrease Tobin's Q and Z-Score. In this case, the firm size causes different impacts on the three firm financial indicators to a different degree.

Regarding company type, the differences between Hong Kong-based and "Hong Kong and Mainland China"-based companies can be investigated regarding firm financial performance. Both types of the company need to obey the regulations to prepare the financial reports. The ROA and Z-Score are not affected by the types of company. For Tobin's Q, there is a difference between Hong Kong-based and "Hong Kong and Mainland China"-based companies. This is like the research result of Chen (2007). According to his results, there is no difference between ROA and types of company. According to the result of this study, there is a difference between Hong Kong-based and "Hong Kong and Mainland China"-based companies with Tobin's Q. For Tobin's Q, it is due to the perception of investors of the company, and it reflects the confidence of investors in the board's management.

6.10.4 *The insights from the results of hypothesis testing*

From the results of hypothesis testing, ROA is affected by family involvement. In other words, the company depends on how much financial support is provided by the owners, such as family involvement. According to the conceptual framework of this study, there is a principal and agency relationship between the family directors and shareholders. It can explain that the liability of the family members is to act for the best interest of the shareholders. It should prevent any discrimination of minority interests, moral hazards, and adverse selection. This study further highlights the importance of agency theory between family directors and shareholders. Furthermore, it can prove that most listed companies may still depend on family funds as most of Hong Kong listed companies are family owned. The increasing in board size causes a statistically significant influence on the relationship between CEO duality or the number of independent non-executive directors towards ROA. In this case, the moderating effect of board size cannot ignore. It can prove the conceptual framework of this study and enhance the steward role of family members inside the board, such as reducing the influence of CEO duality and appointing more independent non-executive directors to the board. Increasing of board size can enhance the monitoring functions of the board and minimize the domination of some board members, and it is one of the important assumptions of agency theory as suggested in the study of John and Senbet (1998).

Tobin's Q is affected by some board characteristics, such as CEO duality and the education level of the board members. Both factors can enhance the confidence of investors. Investors are concerned about the quality of management and reducing the risks of mismanagement and malpractice. It can encourage institutional investors to increase their investment and retain their holdings for the long term. It can be

reflected in the value of Tobin's Q. Under the conceptual framework of this study, it can further prove the stewardship relationship between the board members and the stakeholders including potential investors. CEO duality is a hot issue in the corporate governance area. Bhuiyan et al. (2010) and Carter et al. (2003) found a negative relationship between CEO duality and firm financial performance. Coles and Hesterly (2000) investigated the relationship between share price and CEO duality, and their study found a negative relationship between Tobin's Q and CEO duality. Investors may have more confidence in a board with more highly educated board members according to Ujunwa (2012). This study can further prove the stewardship role of the board in Hong Kong. If the same person acts as the chairman and CEO, it may negatively affect the share price. This may be due to the negative perception of investors of CEO duality. There is a common problem of lack of control if the same person acts as the chairman and CEO of the board. From a practical perspective, it is better to appoint different people to act as the chairman and CEO for enhancing the corporate governance of the company. More highly educated board members can improve the market price of the company. Under resource dependence theory, potential investors may consider that board members with a higher educational background can contribute more specific resources to the company, such as the personal network. This can benefit the long-term development of the company and in turn, enhance Tobin's Q value. A higher education level among board members can stimulate the market value. Tobin's Q is the market value of the company, and it depends on the perception and behavior of the investors. It cannot be denied that a company with many board members with a higher educational level and no CEO duality issue in the company can give better confidence to investors. In other words, investors can feel more psychologically safe about the company and can safeguard their investment in the target company. In this case, the company can obtain more

funding from the stock market. Sahi (2017) pointed out that the psychological bias of investors can influence how they make investments in the stock market. Some critical issues may deter their investments, such as CEO duality. For board size, it can cause a moderating effect on the relationship between family involvement or the number of board members with a master's degrees or above and Tobin's Q. Under the conceptual framework of this study, the market expects the increasing of board size can reduce the influence of family members and then improve the firm performance. It can give a positive signal to the market. Without the domination of family members, it can be more fair treatment to all shareholders, and it can attract more potential investors from the market and stimulate the market price of the company.

The Z-Score can prove the importance of independent non-executive directors. The percentage of independent non-executive directors can influence the Z-Score as it measures the solvency and risk level of a company. This matches the result of Bernini et al. (2013). According to their study, the percentage of independent non-executive directors has a positive impact on the Z-Score. A board with more independent non-executive directors can improve the Z-Score and assist the board to perform better risk management. Under the conceptual framework of this study, the independent non-executive directors also have a principal and agency relationship with the shareholders. They should act as the watchdog on behalf of the shareholders. From a practical perspective, if the company wants to enhance the confidence of the shareholders, it should appoint more independent non-executive directors to the board. Balanced power inside the boardroom can provide confidence to the existing shareholders and potential investors. This study shows the reason why different types of board members are on the board, such as executive directors and independent non-executive directors. Family board members and other board members should act

in the best interests of the shareholders regarding the profitability aspect. Independent non-executive directors also need to act in the best interests of the shareholders; they should focus on the control and monitoring aspects. The independent non-executive directors participate in different sub-committees to evaluate the strategy in different aspects, such as the nomination committee, remuneration committee, audit committee and etc. Annuar and Abdul Rashid (2015) stated that the role of independent non-executive directors focuses on the control of the board's performance. The result of this study can further support the stewardship role of independent non-executive directors under the conceptual framework of this study. They can assist the decision-making process and confirm the different views between the board and the managerial staff of the company. Brennan et al. (2016) stated the independent non-executive directors can improve the problem of information asymmetry between the board and manager of the company. It can ensure the operation smoothness of the whole company. In this case, the firm financial performance can improve, such as ROA. One important thing is the managers of the company should know goals, missions, and visions of the board. Otherwise, it cannot achieve the expected results of the company.

6.11 Contributions of this study

This study expects to make contributions in both academic and practical aspects. Regarding academic aspects, this study can make suggestions related to the three theories, i.e., agency theory, stewardship theory, and resource dependence theory. Different theories can govern different board characteristics to make improvements to the firm financial indicators. In the practical aspect, this study can make suggestions about the board characteristics to improve different firm financial indicators.

6.11.1 *Theoretical contributions*

This study used three theories to interpret the results. According to this study, it can be concluded that the agency theory and stewardship theory are more suitable for interpreting the relationship between board characteristics and ROA. Nordqvist et al. (2015) asserted that agency theory is more appropriate to explain the responsibility of the family board members in family business, such as the case in Hong Kong. The agency theory and stewardship theory are also more suitable for interpreting the relationship between board characteristics and Z-Score because the ROA and Z-Score are firm financial indicators of the managerial capabilities of the board. As the board of directors acts as the agent of the shareholders, it needs to maximize the wealth of the shareholders. At the same time, it also needs to maintain the solvency of the company. It should prevent moral hazards and adverse selection, such as accepting too risky projects. In this case, the management should steward the company effectively and efficiently. The result of this study shows the role of executive directors and independent non-executive directors. Under agency theory, both types of directors need to know the principal and agency relationship between them and the shareholders. They need to use the power properly for the best interests of shareholders. Furthermore, they need to steward the board to make the decision. But the role is quite different. The executive directors need to make the investment decision and use the shareholders' fund properly. The independent non-executive directors need to monitor the performance of the executive directors. It can match with the findings of Namazi (2013). According to his study, the board should be the effective role on control mechanism as an agent in times of uncertainty. At the same time, there should be proper and strict control on agent. It expects to ensure the financial result into high profits which will be beneficial for principal and other parties which are directly or indirectly related to the organization. According to the

conceptual framework of this study, the two main key components of Hong Kong listed companies are the family directors and the independent non-executive directors. They are the two key types of members of the board under the current board structure of Hong Kong listed companies.

The stewardship theory can explain the responsibilities of the board members towards the three firm financial indicators. Keay (2016) investigated the stewardship theory involves various factors of the board, such as director's trust, their professional skill, readiness, and faithfulness to concern for the interests of others. The board should be the underlying rule of governance body for the accountability of their work done.

Regarding Tobin's Q, it is more suitable to use stewardship theory and resource dependence theory for interpretation. Tobin's Q is the market perception of a company and reflects the confidence of existing and potential investors in the company. They will buy more shares of the company if they feel optimistic about the future of the company. They will not buy or even dispose of their shares if they feel pessimistic about the future of the company. They may depend on the impression of the management among existing and potential investors in the market. Stewardship theory emphasizes trust-building between the board and existing shareholders as well as potential investors. Few studies used the stewardship theory to explain the relationship between the board and shareholders. This study suggests that the board of directors needs to build trust not only with the shareholders, but also the potential investors. This can improve the firm value or market value. Under stewardship theory, the public is quite sensitive to information about the company, and they will make an appropriate response. In the past, most studies focused on the usage of stewardship theory to interpret the role of directors inside the boardroom, such as leading the

company to make the decisions.

Resource dependence theory is referring to the distinct resources that the board members can contribute to the company, such as reputation, social network, and professional experience in the industry. One example is that listed companies appoint pop stars or social celebrities as directors to the boards. The situation is just like an entertainment-related company using a pop star to advertise its new products. The aim is to gain the trust and confidence of the public and attract their investment in buying company shares. Under resource dependence theory, it explains that board members can use their professional knowledge and personal network to make a high-quality decision to enhance the board performance. It likes the result of Vo and Nguyen (2014) about the statistically significant positive relationship between the number of highly educated directors and Tobin's Q.

This study shows that the three theories can complement each other to interpret the relationship between board characteristics and firm financial performance. This is because a single theory cannot fully analyze the relationship between board characteristics and firm financial performance as proposed by Madhani (2017). This study can also prove the findings of Nicholson and Kiel (2007) as shown in Figure 4 of page 89. According to their study, the critical point is the percentage of outside directors under agency theory. The outside director can reduce the agency costs, such as misconduct of the executive directors. The outside directors can be non-family directors and independent non-executive directors. In this study, it can show that the increasing of board size can increase the number of outside directors and then weaken the impact of CEO duality. It can further elaborate that the agency theory is not only bind to the family directors, but also bind to other board members, such as non-family

directors and independent non-executive directors.

6.11.2 *Practical contributions*

This study examined three firm financial indicators, i.e., ROA, Tobin's Q, and Z-Score. It found quite different results for the three indicators. Board structure may influence the firm financial performance in different aspects. One needs to consider whether increasing the number of family directors, female directors, and independent non-executive directors can have any significant impact on the firm financial performance or not. Apart from the types of directors, the number of board meetings may also have an impact on the firm financial performance. The specific board members' characteristics may also have an impact on the firm financial performance, such as CEO duality and education level of the board members. It is suggested that board structure be improved in different directions, and it depends on the management which aspects of the company it wishes to improve.

To improve the profitability, such as ROA, the company should appoint more family members to the board. This can provide more family funding and a personal network for business development. This is important for listed companies in Hong Kong as most of them are family owned. Their business may not attract potential investors from the stock market to invest in their shares. The major funding may still come from the owners, i.e., family members. If the board size increases, it can reduce the effect of CEO duality and then improve the ROA. Furthermore, it can also increase the percentage of independent non-executive directors to monitor the board and prevent family members from dominating the board's decision-making process as shown in the moderating influence of the board size on the percentage of independent non-executive directors and the ROA. The increasing of the board size can enhance

the monitoring and independence of the board. It can ensure that the proper procedures of decision-making are followed and protect the rights of minority shareholders, and it can ensure the board takes the agency and stewardship responsibility properly.

To improve the firm value or market value, the board should be aware of the perception of the existing and potential investors. The board should be concerned about CEO duality inside the boardroom because CEO duality caused the monitoring and control issues of the board. It affects the market value and Tobin's Q as the existing and potential investors may suspect a stewardship issue with CEO duality under stewardship theory. Regarding Tobin's Q, the company needs to know how to enhance the trust and confidence of existing and potential investors. The company needs to enhance the quality of the board, such as appointing board members with a higher education level. In this study, this is defined as the number of board members with master's degrees or above. Investors may think that more highly educated board members can bring more innovative and creative ideas to the board. They may be more open-minded. Apart from their educational background, they can also bring their social capital to the company. Investors may favor such highly educated board members. The other factor is board size. Investors may consider whether increasing the board size results in the appointment of more higher education board members and thereby enhance board diversity. Then more opinions will be available based on the different backgrounds of the board members, such as professional experience. More board members can also weaken the dominance of family members and then improve Tobin's Q, and it is the same result as Chen and Jaggi (2000). It is because the market expects increasing board size to weaken the family control and safeguard their interest. They can have more confidence to put their investments in the target

companies. By using Tobin's Q as an example, market value can easily fluctuate upon the release of any news about the company, even a change of directorship of the company. The investors will also consider the board's structure and background and experience of the board members. Some multinational enterprises employ reputable personnel in the industry to increase the market value of the company and then attract potential investors. There is the psychological factor of investors' perception of firm value.

Under resource dependence theory, this is good for the company's administration and firm performance, such as Tobin's Q. Under the moderating influence of board size, increasing the board size can increase control on the family directors and more board members with master's degrees or above. It can improve Tobin's Q as the market knows the family members are under the control of more board members. The increasing in board size can also cause a positive impact on Tobin's Q through the appointment of more highly educated board members. It can also strengthen the confidence of the existing as well as potential investors.

Improvement of the Z-Score is the key duty of the board because the company must maintain adequate cash flow to meet its obligations and needs of the company. Many companies may be profitable but may not have enough cash flow as they cannot receive payments from customers. They cannot settle outstanding debts to vendors, such as trade suppliers, loan principal, and interest of financial institutions, rent and payroll. In this case, the trade suppliers and financial institutions can wind up the company. It may affect the survival of the company. The solvency of the company is very important, and the Z-Score can reflect the solvency of the company. According to this study, the company can improve the Z-Score by increasing the percentage of

independent non-executive directors. The most effective method is to keep monitoring the decision-making of the board and prevent too heavy investment. In some cases, over-aggressiveness of the board is not a good thing for the company, and it may cause serious cash flow issues or even collapse of the company. One example is LeEco (legally named Leshi Internet Information and Technology Corp., Beijing) which is a high-technology company with its principal business being online videos. But the management was over-aggressive and heavily invested in the automobile industry. Finally, the company suspended its operation from October 2018. It is one famous example of poor monitoring of the board's decisions and over-aggressiveness of the board. It can be considered as being a moral hazard and adverse selection of the management. It is also a typical case of CEO duality because the same person acted as the CEO and chairman of LeEco and caused monitoring issues. In this case, the role of independent non-executive directors is very important, i.e., keeping monitoring and reporting any abnormal cases—over-aggressive and high-risk investments—for shareholders.

Based on the proposals of the “Consultation Conclusions on Review of the Corporate Governance Code & Related Listing Rules, and Housekeeping Rule Amendments” published on 10 December 2021 by the HKEX and enacted since 1 January 2022, the requirements under this new Corporate Governance Code will apply to the Corporate Governance Reports of the listing companies for the financial year commencing on or after 1 January 2022. This Code emphasizes the importance of the independent non-executive directors inside the board, and according to the proposals, the independent non-executive directors should continue to make the expected contribution to the board, e.g., independent advice during the decision-making process. The Code also emphasizes the importance of the rotation of the independent

non-executive directors. The independent nonexecutive directors cannot stay in the board more than nine years; hence this requirement can avoid entrenchment and also attract new views and perspectives from new appointed independent non-executive directors. They need to ensure the succession planning to ensure long-term success of the company, and they need to ensure the transparency and independent oversight of the Nomination Committee. They need to assist the company to appoint suitable people to the board. From this point of views, the HKEX emphasizes that independent non-executive directors should exert the role to monitor and control the board. In this study, it proved that one important function of independent non-executive directors is to ensure sustainable success of the company. They exert influence in short-term and long-term success of the company. In short-term, the increasing of board size can appoint more independent non-executive directors and improve the decision-making process, and it can improve the profitability. In long-term, the independent non-executive directors can control the solvency of the company.

To sum up, different firm financial indicators are affected by different board characteristics. The relationship can be interpreted by different theories under the conceptual framework of this study. The company can change the board's structure to improve the corresponding firm financial indicators. One important finding is the function of independent non-executive directors. They can enhance the Z-Score of the company and prevent over-aggressiveness of the board. Furthermore, the increasing of board size can increase the appointment of more independent non-executive directors, and it can monitor the board and provide more independent opinions to the board. Finally, it can enhance the returns of the company, i.e., ROA.

6.12 Chapter summary

From the results of this study, family involvement caused a positive impact on ROA. Most of the listed companies in Hong Kong relied on family involvement, especially funding. CEO duality and CEO without duality caused different impacts on Tobin's Q. The increase in board size and increase in the number of board members with master's degree or above caused a positive impact on Tobin's Q. For Tobin's Q, it reflects the market perception of the board members. The investors expect the high-quality board members, such as higher education and separate individual to act as the chairman and CEO. For Z-Score, the role of independent non-executive directors was very important to monitor the board performance according to the results of this study.

For the moderating influence of the board, the increase in board size reduced the influence of CEO duality and then enhance ROA. Furthermore, increasing board size also increased the number of independent non-executive and then improved ROA. For Tobin's Q, the increase in board size reduced the influence of family involvement as more outside members were appointed to the board. The increase in board size also increased the number of higher educated board members. Both can enhance the confidence of the investors and improve Tobin's Q.

For theoretical contribution, the family members are responsible for the shareholders under agency theory, and they need to maximize the wealth of shareholders, such as ROA. Under stewardship theory, the increase in board size can reduce the influence of CEO duality and also increase the number of independent non-executive directors to monitor the board members. So it can enhance the steward capability of the board members to achieve better ROA for the shareholders.

For Tobin's Q, increasing the number of board members with master's degree and overcoming CEO duality shortcomings improved the market perception. For stewardship theory, the higher educated board members provided confidence to the investors, and the investors were also concerned about the CEO duality issue according to the results of this study. Under stewardship theory, both board characteristics affected the steward capability of the board. Increasing board size reduced the influence of family members and then improved the leadership quality of the board. Increasing board size increased the number of board members with master's degree according to the results of this study. The higher educated board members can bring their resources to the company under resource dependence theory, such as professional skills and personal network. It can provide a positive image of the company to the market.

For Z-Score, the role of independent non-executive directors was very important. Other board characteristics were not exerted any significant influence on Z-Score. Independent non-executive directors owed the agency responsibility to the shareholders according to the results of this study. Under agency theory, independent non-executive directors need to monitor other board members. They are also responsible to lead the board to make good decisions under stewardship theory.

For practical contribution, this study can suggest a good board structure to enhance the firm financial performance. To improve the ROA, family involvement is very important as many listed companies in Hong Kong are family owned. The major financial resources of many Hong Kong listed companies have relied on the founders and their family members. In order to prevent the family members to dominate the

board decision, the increasing board size can appoint more independent non-executive directors and improve the ROA.

Apart from profitability, increasing board size can weaken the dominating power of family members and improve the market perception of the company. It can improve Tobin's Q. It is due to more outside directors appointed to the board. The investors expect the high-quality board and then make the good decision. The company can appoint more well-educated board members. For liquidity or Z-Score of the company, the role of independent non-executive directors is very important.

Chapter 7. Conclusions

7.1 Introduction

This chapter provides a summary of the results of this study. This study evaluated the relationship between board characteristics and firm financial performance. In addition, it evaluated the moderating effect of board size on board characteristics and firm financial performance. It provided the key findings of this study according to the four objectives in Chapter 1 of this study. It made recommendations on the policy to appoint the board members to improve the specific firm financial performance. It also stated the limitations of this study and made suggestions about the future study on this topic.

7.2 Results of the effect of board characteristics on firm financial performance

Regarding family involvement, family members can only exert influence on the ROA. Family members cannot exert any influence on Tobin's Q and Z-Score. Regarding ROA, family members can inject more internal resources into the company to enhance profitability. Tobin's Q represents the market perception of the company, and the family members cannot exert any influence. Z-Score is the solvency of the company. Family members cannot exert any influence.

Regarding gender diversity, the increase of female directors cannot exert any influence on ROA, Tobin's Q, and Z-Score. It reflects that the influencing power of female directors in Hong Kong listed companies is still very weak. A certain number of listed companies in Hong Kong do not appoint any female directors. It is understood that there is no relationship between gender diversity and firm financial performance. According to the HKEX, listed companies should appoint at least one female director to enhance the board's diversity. In the future, the HKEX proposes to

use the "comply or explain" approach to force companies to appoint female directors. It may be foreseen that the influencing power of female directors can increase in the future.

CEO duality is a hot corporate governance issue where the same person acts as the CEO and chairman at the same time. According to this study, there is a different impact on Tobin's Q of the company with CEO duality or without CEO duality. There is no impact on the ROA and Z-Score.

The percentage of independent non-executive directors represents the independence of the board regarding the firm financial performance. The percentage of independent non-executive directors only affected the Z-Score. The percentage of independent non-executive directors cannot exert influence on the ROA and Tobin's Q. This means that the role of independent non-executive directors may not be responsible for the profitability of the company, because it cannot affect the ROA. This study confirms that the role of independent non-executive directors is to monitor the board and not to participate in the daily operation of the company.

Regarding board meetings, the result of this study is not similar to past studies. In Hong Kong, the number of board meetings cannot influence any firm financial indicators. In other words, the number of board meetings cannot only be linked to the firm financial performance directly. Board meetings involve discussing strategies and carrying out the decision-making process. The quality of meetings is much more important than the number of times of board meetings. During the data collection process, the targeted company with the highest number of board meetings was due to the disposal of the company to other parties. The board needed to hold many meetings.

It is not related to firm financial performance, such as profit-making activity.

Regarding the education level of the board members, it is defined as the number of board members with master's degrees or above. According to the result of this study, the education level of the board members can exert an influence on Tobin's Q, and it cannot influence the ROA and Z-Score. In this case, it means that investors may also be concerned about the education level of board members, because they believe that board members with a higher education level can facilitate firm performance. ROA and Z-Score do not have direct relationships with the education level of board members. In this study, the board members of some sample cases had no formal education, e.g., other qualifications. It is suggested that the profitability and solvency of the company may not solely depend on the academics of the board members. However, the professional qualifications and industry working experience of the board members may be the critical success factors of the Hong Kong listed companies to improve the profitability and risk management. They can lead the board to make good decisions and strategies. The professional experience of the board members may be a distinct advantage for the listed companies in Hong Kong.

Board size causes influence on Tobin's Q according to the result of this study. This may be due to the perception of investors that more board members from different backgrounds enable better discussion of the strategy of the company. They expect better firm financial performance. The market value can increase because market value is a psychological factor for investors. If they trust the board, they will purchase more shares of the targeted company which can stimulate the share price of the company.

Regarding the moderating effect of board size, the board size negatively influences the relationship between CEO duality and ROA. The increasing of board size can weaken the impact of the CEO duality and then improve the ROA. The board size positively influences the relationship between the percentage of independent non-executive directors and ROA. Increasing the board size can cause the company to appoint more independent directors and then improve the ROA.

For Tobin's Q, board size can negatively influence family involvement. Board size can also positively influence the number of board members with master's degrees or above and Tobin's Q. A larger board size weakens the influence of family involvement and further improves Tobin's Q. It can also increase the number of highly educated board members and then improve Tobin's Q. Both can increase the confidence of the investors. The result reflects the investor concerns about the quality of the board. A high quality of board should composite with high educated members and less of family influence.

7.3 Reflection on the methodology

This study used a quantitative research method. For the evaluation of the firm financial performance, it may be better to use some concrete and objective measurements, such as firm financial indicators. It can investigate the relationship between the board characteristics and firm financial performance. For the quality of decision-making and board process, it may be better to use a qualitative research method to collect the opinions from board members, such as collecting information through interview and focus group.

7.4 Key findings

This study discovered that different board structures may influence different firm financial indicators. This study can meet the research objectives of this study and make recommendations from different points of view, that is, the shareholders and investors.

For objective 1 of this study, it identifies the board characteristics which have the significant relationships with the firm financial performances. This study revealed that family ownership is still the major factor to stimulate the profitability of the company. The family members owe the responsibility to the shareholders to achieve good financial performance in Hong Kong listed companies, i.e., return to shareholders. The influence of female directors is still very low in Hong Kong, but there is a trend of appointing more female directors in different financial markets with an aim to improve the board's diversity and accept different points of view. As Hong Kong is an international financial center, it cannot lag behind other financial markets. From a regulatory point of view, the HKEX is considering enforcing the requirement of the appointment of female directors. From a professional point of view, the HKCGI recommends that listed companies to appoint more female directors to enhance the board's diversity. According to its study, female directors can provide more insights into the strategy of the company and enhance firm performance. Finally, this study revealed that CEO duality solely affects the market recognition of the listed companies. The role of independent non-executive directors is very important.

For objective 2 of this study, it achieves the insights into the responsibilities of different board members towards different firm financial indicators. Another key finding of this study is to further prove the division of responsibility of the board

members. Executive directors are responsible for the daily operation of the company, and they are profit-driven to satisfy the expectations of shareholders. Independent non-executive directors are not profit-driven, and their role is to monitor the conduct of the board members, especially in important decision-making. They need to protect the rights of shareholders and maintain the health of the company, e.g., adequate cash flow for operation. Independent non-executive directors can exert the control of the board members and prevent the board members from making high-risk investments which may damage the liquidity of the companies.

For objective 3 of this study, it investigates what constitute a good board structure to improve the firm financial performances. One important issue may be the board size. Regarding the board size, the larger board size can appoint more highly educated board members and prevent the dominance of family ownership. It can dilute their power as more outside directors can be appointed, therefore, enhancing the corporate image and creating value for the companies. It can improve the market value of the companies, i.e., Tobin's Q. For ROA, it can cause a positive impact on the relationship between the number of independent non-executive directors and ROA. So more independent non-executive directors can be appointed to monitor how executive directors formulate and execute corporate strategies. Furthermore, increasing board size can weaken the impact of CEO duality, therefore, enhancing board's decision and ROA.

A good board structure can strengthen the confidence of the existing shareholders and attract potential investors to the company, and trust needs to be built with them. Different theories provide insight between different parties. The board members must know their roles and functions on the board and ensure the smooth operation of the

board. The most important finding of this study is the discovery of the importance of independent non-executive directors inside the boardroom. From the theoretical aspect, the agency theory supports that the role of independent non-executive directors is not only limited to the shareholders; they are responsible for the outsiders as well as stated by Bathala and Rao (1995). Increasing board size can appoint more independent non-executive directors to monitor the board and improve the ROA of the company.

For objective 4 of this study, it describes a full picture to the policymakers, such as the HKEX, about which board characteristics to be improved to facilitate the firm financial performances and enhance the board quality. The HKEX expects to enhance the board independence and requires that the independent non-executive directors shall not serve the board for more than nine years. Compared to the influence of the number of female directors, the influence of the number of independent non-executive directors is much more important as shown in the results of this study. The board independence is important for internal management, and it is expected that the HKEX shall impose strict requirements on independent non-executive directors. Apart from the characteristics of board members, the increasing of higher educated board members can also improve the impression of the companies and strengthen the confidence of the shareholders.

7.5 Practical implication – Board structure and process

It is controversial whether an effective board structure enhances the firm financial performance. One critical issue may be whether increasing the percentage of independent non-executive directors and female directors can increase firm financial performance or not. Family-owned companies may rely on the resources of the family,

such as financial resources. On the other side, people may also think that family members may dominate the decision-making of the board. It may be difficult to conclude whether family involvement is good or bad. But it can exert a certain amount of control to prevent misconduct of the family members. Increasing the number of board meetings may increase the amount of interaction between the board members and then facilitate firm financial performance. At the same time, some arguments happen, such as the expenditure to increase the number of board meetings and the content of board meetings.

This study concludes that the number of board meetings cannot improve the firm financial performance. Regarding increasing the number of board members with higher education, it may be assumed that more highly educated board members can enhance the firm financial performance through their professional points of view. But some people may argue that the professional experience of board members may also enhance the firm financial performance. This study provides an important signal about the importance of the number of independent non-executive directors. Their role is very important for internal management of the company, such as monitoring the board's decision-making process and preventing any misconduct of the executive directors. They need to ensure that the investment is under an acceptable risk level. Increasing number of independent non-executive directors represents the board dependence and enhances the board performance.

One important difference between executive directors and independent non-executive directors is the remuneration matter. For executive directors, most of their remuneration package may be linked to the profitability of the company. Under this circumstance, they may cause fraud or make over-aggressive investments. The

remuneration package of independent non-executive directors is not linked to the profitability of the company; therefore, it may lack incentive for independent non-executive directors to cause fraud or misconduct. It is the reason of the HKEX to require the independent non-executive directors to take higher degree of control role inside the board. One example is that the HKEX restricts the appointment period of independent non-executive directors on the board and prevent them to collude with the executive directors.

Furthermore, García-Sánchez and Martínez-Ferrero (2016) found that the independent non-executive directors can facilitate the corporate social responsibility functions of the company and enhance the disclosure the risk management policy of the company. In Hong Kong, ESG report is one of the important documents of listed companies. It can provide more information to the shareholders. It is the best practice for a company to publish ESG information simultaneously with its financial information, because governance and oversight of ESG matters and management of material ESG risks are an integral part of good corporate governance. The improvement timeliness of ESG information can facilitate shareholders and investors' understanding of the company's performance in a more comprehensive manner. The change needs to begin with a shift of mindset at the top of organization. The role of independent non-executive directors is very important in this aspect.

Based on the proposals of the “Consultation Conclusions on Review of the Corporate Governance Code & Related Listing Rules, and Housekeeping Rule Amendments” published on 10 December 2021 by the HKEX and enacted since 1 January 2022, it emphasizes the importance of improvement of shareholders communications. According to the proposals, the effective engagement with shareholders and

stakeholders is important for a company to meet its responsibilities to stakeholders. The continuous dialogue with shareholders and stakeholders enables dissemination of information and facilitates the board to effectively solicit and receive feedback. The listed companies in Hong Kong need to ensure that two-way communication is conducive to setting or refining the company's strategy for future development. The two-way communications can also let the board of directors to know the opinions from the shareholders. It can also prevent the agent costs for the misconducts of the board under the agency theory. The shareholders can also enhance monitoring and controlling through the enhancement of information transparency, because it can build a healthy culture and promote governance throughout the business. The company can demonstrate openness and accountability. The independent non-executive directors can assist the company to achieve such goal. In this case, the selection of independent non-executive directors is very important, and the listed company must also follow the guidance of the HKEX.

7.6 Practical implication – Policy making

Apart from the management of the companies, the policymaker of the authority, such as the HKEX, cannot apply the foreign regulations directly. The policymaker needs to consider the local business culture. By using Norway's female director policy, the increase of female directors causes a negative impact on Tobin's Q. In this case, it may not be suitable for the HKEX to set the minimum percentage of female directors compulsory, because Hong Kong is a much masculine place than Norway. Male directors are still occupying the boardroom in Hong Kong listed companies. The HKEX emphasized the importance of the board independence and modified the regulations to ensure the high quality of independent non-executive directors with the aim to keep their independence. Uribe-Bohorqueza et al. (2018) found that the board

independence can be improved by the regulation, and it can facilitate the firm financial performance.

The result of this study can further strengthen the importance of independent non-executive directors towards the firm profitability and risk management, because they can monitor the board members and prevent them from over-aggressive activities. Their functions are very important to ensure the profitability of the company and also the security of the company. One proposed requirement of the HKEX is that the independent non-executive directors cannot stay on the board for more than nine years in order to prevent them from colluding with the executive directors. Furthermore, this policy can enhance the quality of the listed companies in Hong Kong and minimize the negative news about listed companies, e.g., misconduct of board members. This policy can strengthen the position of Hong Kong as the international financial center and maintain sustainable growth for companies from around the world to raise IPO in Hong Kong.

In the actionable knowledge aspect, this study can match with further support the motives of the HKEX to enhance the quality of independent non-executive directors. Currently, a weak position of female directors is in the boardroom. The amendment of the regulations is expected to enhance the status of the female on the board. The listed companies of Hong Kong need to pay attention to the importance of the female directors and the independent non-executive directors. The regulatory body, such as the HKEX, needs to review the standards and make the appropriate amendments, e.g., the proposed new requirements of Hong Kong listing rules.

This study reflects the importance of board diversity. A board should include different

types of directors and ensure diversified opinions inside the boardroom. Based on the proposals of the “Consultation Conclusions on Review of the Corporate Governance Code & Related Listing Rules, and Housekeeping Rule Amendments” published on 10 December 2021, The HKEX emphasizes the importance of board diversity, such as gender. Chapple and Humphrey (2014) found low influence of female directors due to lack of female directors on the board in Australia. It expects that increasing the number of female directors on the board can enhance the influence of female directors. Among all board members, the role of independent non-executive directors is very important, because it safeguard the interest of shareholders. Independent non-executive directors assist to maintain the market health through their monitoring activities, hence high standard of independent non-executive directors is expected.

7.7 Limitations of this study

This study focuses on financial performance evaluation and uses the quantitative research method. Some information may be obtained through a qualitative research method, such as leadership skills and strategy formation processes through interviews with the board members. Herciu (2017) stated that the selection of the research method depends on the aim of the study. If the focus is on firm financial performance, a quantitative research method should be used. If the focus is on the management style, a qualitative research method should be used. According to his study, it is better to use a case study method. To evaluate firm performance, a case study can be performed with some family-owned companies selected. His study performed an interview with the board members and evaluated their management style regarding strategy formation. It can provide more insight into strategic aspects.

7.8 Future research

For future research, there were 120 targeted companies in this study and all of them are listed companies on the main board of the HKEX. More companies should be selected to enhance the representation of the sample cases. Furthermore, a specific industry can also be selected to perform a similar study because different industries may give different results. This study selected six board characteristics as independent variables, i.e., family involvement, gender diversity, CEO duality, percentage of independent non-executive directors, number of board meetings and educational level of board members. In the future, other board characteristics can be selected, such as board members who duration of appointment on the board and nationality of board members as independent variables. It can investigate the influencing power of more board characteristics.

Regarding the educational level of board members, future research can focus on board members with professional qualifications, e.g., professional accountants, engineers. It would be also valuable to study the effect of gender diversity on firm financial performance, especially after the HKEX enforces the appointment of at least one female director to the board. The future study can take Ahern and Dittmar (2012) as an example. In Norway, increasing number of female directors causes a negative impact on Tobin's Q. Their study performed after the enforcement the policy of required number of female directors. The HKEX guidance also encourages the listed companies to evaluate the financial performance of the board after the enforcement of the no single-gender board policy. The future study can focus on the relationship between the gender diversity and the firm financial performance.

7.9 Chapter summary

This chapter provides the key findings of this study. It also gives practical suggestions for the board structure to improve the firm financial performance. For board gender diversity, the HKEX requires the listed companies to appoint at least one female director under the "complain or explain" approach and there is no single gender board from 1st January 2025. This study revealed no significant influence of female directors on the firm financial performance. For board independence, this study revealed that the role of independent non-executive directors is very important. They need to monitor the conduct of other board members and it can enhance the profitability of the company. Furthermore, they need to ensure the liquidity of the company and prevent too risky investments. For the limitation of this study, it can consider performing a case study to evaluate some board characteristics, such as family involvement in the strategy formation. For future research, a similar study can perform to investigate the influence of female directors after the HKEX enforces the regulations of gender diversity.

Appendices

Appendix 1 Descriptive Statistics of this study

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Dependent variables					
ROA	600	-2.33728	.95456	-.0087738	.19662167
Tobin_Q	600	-.75324	1.36704	.0518812	.33850100
Z_Score	600	-4.23813	4.78467	.5832679	.63851737
Independent variables					
Percentage_Family_Director	600	.00000	.66667	.2128323	.16625325
Gender_diversity	600	.00000	.80000	.1107810	.13005422
CEO_Duality	600	.00	1.00	.7183	.45019
Percentage_Independent_Non_Executive_Director	600	.22222	.75000	.4325378	.08674969
No_board_meeting	600	.00	48.00	8.0867	4.87840
Director_Master_or_above	600	.00	1.00	.3854	.21792
Control variables					
Firm_Size	600	1.65260	5.21326	3.4563344	.69444634
Company_type	600	.00	1.00	.1800	.38451
Moderating variable					
Board_Size	600	4.00	20.00	8.2867	2.49497
Valid N (listwise)	600				

Appendix 2 Correlation coefficients of ROA as dependent variable

Variables	ROA	Percentage of family directors	Gender diversity	CEO duality	Percentage of independent non-executive directors	Firm size	Company type	Number of board meeting	Education level of board members	Board size
ROA	1									
Percentage of family directors	0.11	1								
Gender diversity	0.01	0.18	1							
CEO duality	0.03	0.05	0.03	1						
Percentage of independent non-executive directors	-0.18	0.14	0.06	-0.25	1					
Firm size	0.39	-0.01	-0.06	0.2	-0.38	1				
Company type	0.04	-0.13	-0.06	0.02	-0.1	0.14	1			
Number of board meeting	-0.18	-0.2	0.01	-0.03	0.07	-0.2	-0.06	1		
Education level of board members	0.02	-0.25	0.05	0.01	-0.04	0.05	0.22	0.08	1	
Board size	0.13	-0.14	-0.13	0.16	-0.65	0.43	-0.08	-0.03	-0.04	1

Appendix 3 Hierarchical regression analysis on the ROA with independent variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.543 ^a	.355	.353	.18093562
2	.577 ^b	.382	.372	.17886792

a. Predictors: (Constant), Firm_Size

b. Predictors: (Constant), Firm_Size, Percentage_Family_Director, Percentage_Female_Director, Director_Master_or_above, No_board_meeting, Percentage_Independent_Director, Board_Size

Appendix 3 Hierarchical regression analysis on the ROA with independent variables (Con't)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.580	1	3.580	109.362	.000 ^b
	Residual	19.577	598	.033		
	Total	23.157	599			
2	Regression	4.217	7	.602	18.830	.000 ^c
	Residual	18.940	592	.032		
	Total	23.157	599			

a. Dependent Variable: ROA

b. Predictors: (Constant), Firm_Size

c. Predictors: (Constant), Firm_Size, Percentage_Family_Director, Percentage_Female_Director, Director_Master_or_above, No_board_meeting, Percentage_Independent_Director, Board_Size

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.394	.038		-10.487	.000
	Firm_Size	.111	.011	.393	10.458	.000
2	(Constant)	-.242	.087		-2.769	.006
	Firm_Size	.106	.012	.374	8.802	.000
	Percentage_Family_Director	.125	.048	.106	2.625	.009
	Gender_diversity	.007	.058	.005	.122	.903
	Percentage_Independent_Director	-.208	.112	-.092	-1.852	.065
	No_board_meeting	-.004	.002	-.087	-2.248	.025
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.004	-.078	-1.518	.130

a. Dependent Variable: ROA

Appendix 4 Independent samples t-test between CEO duality and ROA

Group Statistics					
CEO_Duality		N	Mean	Std. Deviation	Std. Error Mean
ROA	0	169	-0.017	0.207	0.016
	1	431	-0.005	0.193	0.009

Independent Samples Test									
				t-test for Equality of Means	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
				T					Lower Upper
ROA	Equal variances assumed	5.048	0.025	-0.657	598	0.512	-0.012	0.018	-0.047 0.0233
	Equal variances not assumed			-0.636	288.39	0.525	-0.012	0.018	-0.048 0.0245

Appendix 5 Independent samples t-test between company type and ROA

Group Statistics					
Company_type		N	Mean	Std. Deviation	Std. Error Mean
ROA	0	492	-0.012	0.202	0.009
	1	108	0.007	0.173	0.017

Independent Samples Test										
				t-test for Equality of Means T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper	
ROA	Equal variances assumed	3.511	0.061	-0.903	598	0.367	-0.019	0.021	-0.06	0.022
	Equal variances not assumed			-0.996	177.088	0.32	-0.019	0.019	-0.06	0.019

Appendix 6 Moderating effect of board size towards independent variables and ROA

(i) Moderating effect of board size towards percentage of family director and ROA

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.394	.038		-10.487	.000
	Firm_Size	.111	.011	.393	10.458	.000
2	(Constant)	-.242	.087		-2.769	.006
	Firm_Size	.106	.012	.374	8.802	.000
	Percentage_Family_Director	.125	.048	.106	2.625	.009
	Gender_diversity	.007	.058	.005	.122	.903
	Percentage_Independent_Director	-.208	.112	-.092	-1.852	.065
	No_board_meeting	-.004	.002	-.087	-2.248	.025
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.004	-.078	-1.518	.130
3	(Constant)	-.233	.092		-2.538	.011
	Firm_Size	.106	.012	.373	8.748	.000
	Percentage_Family_Director	.074	.164	.062	.448	.654
	Gender_diversity	.008	.058	.006	.145	.885
	Percentage_Independent_Director	-.206	.113	-.091	-1.824	.069
	No_board_meeting	-.003	.002	-.086	-2.208	.028
	Director_Master_or_above	.021	.035	.024	.604	.546
	Board_Size	-.007	.005	-.092	-1.373	.170
	BoardSize_FamilyDirector	.006	.019	.046	.330	.741

a. Dependent Variable: ROA

(ii) Moderating effect of board size towards CEO duality and ROA

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.394	.038		-10.487	.000
	Firm_Size	.111	.011	.393	10.458	.000
2	(Constant)	-.242	.087		-2.769	.006
	Firm_Size	.106	.012	.374	8.802	.000
	Percentage_Family_Director	.125	.048	.106	2.625	.009
	Gender_diversity	.007	.058	.005	.122	.903
	Percentage_Independent_Director	-.208	.112	-.092	-1.852	.065
	No_board_meeting	-.004	.002	-.087	-2.248	.025
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.004	-.078	-1.518	.130
3	(Constant)	-.239	.087		-2.747	.006
	Firm_Size	.108	.012	.382	8.976	.000
	Percentage_Family_Director	.131	.048	.110	2.735	.006
	Gender_diversity	.008	.058	.005	.141	.888
	Percentage_Independent_Director	-.234	.113	-.103	-2.070	.039
	No_board_meeting	-.003	.002	-.086	-2.223	.027
	Director_Master_or_above	.023	.035	.025	.645	.519
	Board_Size	-.003	.004	-.042	-.786	.432
	BoardSize_CEOduality	-.004	.002	-.088	-2.001	.046

a. Dependent Variable: ROA

(iii) Moderating effect of board size towards percentage of female director and ROA

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.394	.038		-10.487	.000
	Firm_Size	.111	.011	.393	10.458	.000
2	(Constant)	-.242	.087		-2.769	.006
	Firm_Size	.106	.012	.374	8.802	.000
	Percentage_Family_Director	.125	.048	.106	2.625	.009
	Gender_diversity	.007	.058	.005	.122	.903
	Percentage_Independent_Director	-.208	.112	-.092	-1.852	.065
	No_board_meeting	-.004	.002	-.087	-2.248	.025
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.004	-.078	-1.518	.130
3	(Constant)	-.245	.089		-2.773	.006
	Firm_Size	.106	.012	.375	8.799	.000
	Percentage_Family_Director	.126	.048	.106	2.626	.009
	Gender_diversity	.060	.211	.040	.285	.776
	Percentage_Independent_Director	-.212	.113	-.093	-1.868	.062
	No_board_meeting	-.003	.002	-.087	-2.225	.026
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.005	-.070	-1.182	.238
	BoardSize_FemaleDirector	-.007	.027	-.037	-.261	.794

a. Dependent Variable: ROA

(iv) Moderating effect of board size towards percentage of independent non-executive director (INED) and ROA

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.394	.038		-10.487	.000
	Firm_Size	.111	.011	.393	10.458	.000
2	(Constant)	-.242	.087		-2.769	.006
	Firm_Size	.106	.012	.374	8.802	.000
	Percentage_Family_Director	.125	.048	.106	2.625	.009
	Gender_diversity	.007	.058	.005	.122	.903
	Percentage_Independent_Director	-.208	.112	-.092	-1.852	.065
	No_board_meeting	-.004	.002	-.087	-2.248	.025
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.004	-.078	-1.518	.130
3	(Constant)	-.019	.130		-.146	.884
	Firm_Size	.103	.012	.363	8.523	.000
	Percentage_Family_Director	.121	.048	.102	2.541	.011
	Gender_diversity	.019	.058	.012	.325	.745
	Percentage_Independent_Director	-.774	.269	-.341	-2.881	.004
	No_board_meeting	-.003	.002	-.081	-2.097	.036
	Director_Master_or_above	.019	.035	.021	.545	.586
	Board_Size	-.040	.015	-.505	-2.640	.009
	BoardSize_INED	.090	.039	.342	2.318	.021

a. Dependent Variable: ROA

(v) Moderating effect of board size towards number of board meeting and ROA

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.394	.038		-10.487	.000
	Firm_Size	.111	.011	.393	10.458	.000
2	(Constant)	-.242	.087		-2.769	.006
	Firm_Size	.106	.012	.374	8.802	.000
	Percentage_Family_Director	.125	.048	.106	2.625	.009
	Gender_diversity	.007	.058	.005	.122	.903
	Percentage_Independent_Director	-.208	.112	-.092	-1.852	.065
	No_board_meeting	-.004	.002	-.087	-2.248	.025
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.004	-.078	-1.518	.130
3	(Constant)	-.324	.093		-3.502	.000
	Firm_Size	.100	.012	.352	8.144	.000
	Percentage_Family_Director	.122	.048	.103	2.560	.011
	Gender_diversity	.016	.058	.011	.280	.780
	Percentage_Independent_Director	-.211	.112	-.093	-1.884	.060
	No_board_meeting	.007	.004	.177	1.612	.108
	Director_Master_or_above	.024	.035	.027	.692	.489
	Board_Size	.006	.006	.079	.999	.318
	BoardSize_No_Meeting	-.001	.000	-.320	-2.570	.010

a. Dependent Variable: ROA

(vi) Moderating effect of board size towards the education level of board members (percentage of board members with master's degrees or above) and ROA

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.394	.038		-10.487	.000
	Firm_Size	.111	.011	.393	10.458	.000
2	(Constant)	-.242	.087		-2.769	.006
	Firm_Size	.106	.012	.374	8.802	.000
	Percentage_Family_Director	.125	.048	.106	2.625	.009
	Gender_diversity	.007	.058	.005	.122	.903
	Percentage_Independent_Director	-.208	.112	-.092	-1.852	.065
	No_board_meeting	-.004	.002	-.087	-2.248	.025
	Director_Master_or_above	.022	.035	.024	.619	.536
	Board_Size	-.006	.004	-.078	-1.518	.130
3	(Constant)	-.290	.095		-3.048	.002
	Firm_Size	.106	.012	.373	8.768	.000
	Percentage_Family_Director	.124	.048	.105	2.603	.009
	Gender_diversity	.006	.058	.004	.109	.913
	Percentage_Independent_Director	-.221	.113	-.097	-1.957	.051
	No_board_meeting	-.003	.002	-.085	-2.187	.029
	Director_Master_or_above	.187	.135	.207	1.389	.165
	Board_Size	.001	.007	.014	.156	.876
	BoardSize_Director_Master_or_Above	-.021	.017	-.209	-1.271	.204

a. Dependent Variable: ROA

Appendix 7 Correlation coefficients of Tobin's Q as dependent variable

Variables	Tobin's Q	Percentage of family directors	Gender diversity	CEO duality	Percentage of independent non-executive directors	Firm size	Company type	Number of board meeting	Education level of board members	Board size
Tobin's Q	1									
Percentage of family directors	-0.12	1								
Gender diversity	0	0.18	1							
CEO duality	-0.16	0.05	0.03	1						
Percentage of independent non-executive directors	0.12	0.14	0.06	-0.25	1					
Firm size	-0.48	-0.01	-0.06	0.2	-0.38	1				
Company type	0.09	-0.13	-0.05	0.2	-0.1	-0.14	1			
Number of board meeting	0.18	-0.2	0	-0.03	0.07	-0.19	-0.06	1		
Education level of board members	0.11	-0.25	0.05	0.01	-0.04	0.05	0.22	0.08	1	
Board size	-0.13	-0.14	-0.13	0.16	-0.64	0.42	-0.08	-0.02	-0.04	1

Appendix 8 Hierarchical regression analysis on the Tobin's Q with independent variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.627 ^a	.378	.376	.29771808
2	.662 ^b	.412	.403	.29247619

a. Predictors: (Constant), Firm_Size

b. Predictors: (Constant), Firm_Size, Percentage_Family_Director, Percentage_Female_Director, Director_Master_or_above, No_board_meeting, Percentage_Independent_Director, Board_Size

Appendix 8 Hierarchical regression analysis on the Tobin's Q with independent variables (Con't)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.631	1	15.631	176.348	.000 ^b
	Residual	53.004	598	.089		
	Total	68.635	599			
2	Regression	17.994	7	2.571	30.050	.000 ^c
	Residual	50.641	592	.086		
	Total	68.635	599			

a. Dependent Variable: Tobin_Q

b. Predictors: (Constant), Firm_Size

c. Predictors: (Constant), Firm_Size, Percentage_Family_Director, Percentage_Female_Director, Director_Master_or_above, No_board_meeting, Percentage_Independent_Director, Board_Size

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.856	.062		13.860	.000
	Firm_Size	-.233	.018	-.477	-13.280	.000
2	(Constant)	.805	.143		5.639	.000
	Firm_Size	-.247	.020	-.507	-12.565	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.906	.057
	Gender_diversity	-.022	.095	-.008	-.233	.816
	Percentage_Independent_Director	-.079	.184	-.020	-.430	.667
	No_board_meeting	.004	.003	.057	1.535	.125
	Director_Master_or_above	.174	.057	.112	3.034	.003
	Board_Size	.009	.007	.064	1.308	.035

a. Dependent Variable: Tobin_Q

Appendix 9 Independent samples t-test between CEO duality and Tobin's Q

Group Statistics					
CEO_Duality		N	Mean	Std. Deviation	Std. Error Mean
Tobin_Q	0	169	0.139	0.387	0.03
	1	431	0.018	0.311	0.015

Independent Samples Test										
				t-test for Equality of Means T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper	
Tobin_Q	Equal variances assumed	9.566	0.002	3.987	598	0	0.121	0.03	0.061	0.181
	Equal variances not assumed			3.628	257.397	0	0.121	0.033	0.055	0.187

Appendix 10 Independent samples t-test between company type and Tobin's Q

Group Statistics					
Company_type		N	Mean	Std. Deviation	Std. Error Mean
Tobin_Q	0	492	0.038	0.333	0.015
	1	108	0.116	0.356	0.034

Independent Samples Test										
			t-test for Equality of Means T	Df	Sig. (2-tailed)	Mean Differenc e	Std. Error Differenc e	95% Confidence Interval of the Difference		
								Lower r	Upper r	
Tobin_Q	Equal variance assumes	0.675	0.412	-2.191	598	0.029	-0.079	0.036	-0.149	-0.008
	Equal variance s not assumed			-2.099	150.811	0.037	-0.079	0.037	-0.153	-0.005

Appendix 11 Moderating effect of board size towards independent variables and Tobin's Q

(i) Moderating effect of board size towards percentage of family director and Tobin's Q

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.856	.062		13.860	.000
	Firm_Size	-.233	.018	-.477	-13.280	.000
2	(Constant)	.805	.143		5.639	.000
	Firm_Size	-.247	.020	-.507	-12.565	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.906	.057
	Gender_diversity	-.022	.095	-.008	-.233	.816
	Percentage_Independent_Director	-.079	.184	-.020	-.430	.667
	No_board_meeting	.004	.003	.057	1.535	.125
	Director_Master_or_above	.174	.057	.112	3.034	.003
	Board_Size	.009	.007	.064	1.308	.035
3	(Constant)	.715	.149		4.789	.000
	Firm_Size	-.244	.020	-.502	-12.416	.000
	Percentage_Family_Director	.358	.268	.176	1.336	.182
	Gender_diversity	-.035	.095	-.014	-.372	.710
	Percentage_Independent_Director	-.103	.184	-.026	-.562	.575
	No_board_meeting	.003	.003	.050	1.356	.176
	Director_Master_or_above	.179	.057	.115	3.122	.002
	Board_Size	.020	.009	.144	2.277	.023
	BoardSize_FamilyDirector	-.062	.031	-.262	-1.978	.048

a. Dependent Variable: Tobin_Q

(ii) Moderating effect of board size towards CEO duality and Tobin's Q

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.856	.062		13.860	.000
	Firm_Size	-.233	.018	-.477	-13.280	.000
2	(Constant)	.805	.143		5.639	.000
	Firm_Size	-.247	.020	-.507	-12.565	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.906	.057
	Gender_diversity	-.022	.095	-.008	-.233	.816
	Percentage_Independent_Director	-.079	.184	-.020	-.430	.667
	No_board_meeting	.004	.003	.057	1.535	.125
	Director_Master_or_above	.174	.057	.112	3.034	.003
	Board_Size	.009	.007	.064	1.308	.035
3	(Constant)	.808	.143		5.669	.000
	Firm_Size	-.244	.020	-.501	-12.369	.000
	Percentage_Family_Director	-.142	.078	-.070	-1.819	.069
	Gender_diversity	-.021	.094	-.008	-.219	.827
	Percentage_Independent_Director	-.113	.185	-.029	-.611	.542
	No_board_meeting	.004	.003	.058	1.562	.119
	Director_Master_or_above	.175	.057	.113	3.057	.002
	Board_Size	.012	.007	.091	1.767	.078
	BoardSize_CEOduality	-.005	.003	-.068	-1.622	.105

a. Dependent Variable: Tobin_Q

(iii) Moderating effect of board size towards percentage of female director and Tobin's Q

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.856	.062		13.860	.000
	Firm_Size	-.233	.018	-.477	-13.280	.000
2	(Constant)	.805	.143		5.639	.000
	Firm_Size	-.247	.020	-.507	-12.565	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.906	.057
	Gender_diversity	-.022	.095	-.008	-.233	.816
	Percentage_Independent_Director	-.079	.184	-.020	-.430	.667
	No_board_meeting	.004	.003	.057	1.535	.125
	Director_Master_or_above	.174	.057	.112	3.034	.003
	Board_Size	.009	.007	.064	1.308	.035
3	(Constant)	.789	.145		5.453	.000
	Firm_Size	-.247	.020	-.507	-12.534	.000
	Percentage_Family_Director	-.148	.078	-.073	-1.895	.059
	Gender_diversity	.206	.346	.079	.596	.551
	Percentage_Independent_Director	-.095	.185	-.024	-.511	.610
	No_board_meeting	.004	.003	.058	1.576	.116
	Director_Master_or_above	.174	.057	.112	3.035	.003
	Board_Size	.011	.008	.083	1.476	.141
	BoardSize_FemaleDirector	-.031	.045	-.091	-.686	.493

a. Dependent Variable: Tobin_Q

(iv) Moderating effect of board size towards percentage of independent non-executive director (INED) and Tobin's Q

Coefficients^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.856	.062		13.860	.000
	Firm_Size	-.233	.018	-.477	-13.280	.000
2	(Constant)	.805	.143		5.639	.000
	Firm_Size	-.247	.020	-.507	-12.565	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.906	.057
	Gender_diversity	-.022	.095	-.008	-.233	.816
	Percentage_Independent_Director	-.079	.184	-.020	-.430	.667
	No_board_meeting	.004	.003	.057	1.535	.125
	Director_Master_or_above	.174	.057	.112	3.034	.003
	Board_Size	.009	.007	.064	1.308	.035
3	(Constant)	.200	.210		.952	.341
	Firm_Size	-.239	.020	-.490	-12.204	.000
	Percentage_Family_Director	-.137	.077	-.067	-1.774	.077
	Gender_diversity	-.054	.094	-.021	-.574	.566
	Percentage_Independent_Director	1.455	.436	.373	3.341	.001
	No_board_meeting	.003	.003	.047	1.292	.197
	Director_Master_or_above	.181	.057	.117	3.194	.001
	Board_Size	.100	.024	.736	4.088	.000
	BoardSize_INED	-.244	.063	-.539	-3.876	.000

a. Dependent Variable: Tobin_Q

(v) Moderating effect of board size towards number of board meeting and Tobin's Q

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.856	.062		13.860	.000
	Firm_Size	-.233	.018	-.477	-13.280	.000
2	(Constant)	.805	.143		5.639	.000
	Firm_Size	-.247	.020	-.507	-12.565	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.906	.057
	Gender_diversity	-.022	.095	-.008	-.233	.816
	Percentage_Independent_Director	-.079	.184	-.020	-.430	.667
	No_board_meeting	.004	.003	.057	1.535	.125
	Director_Master_or_above	.174	.057	.112	3.034	.003
	Board_Size	.009	.007	.064	1.308	.035
3	(Constant)	.815	.152		5.351	.000
	Firm_Size	-.247	.020	-.506	-12.257	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.898	.058
	Gender_diversity	-.023	.095	-.009	-.244	.807
	Percentage_Independent_Director	-.079	.184	-.020	-.428	.669
	No_board_meeting	.003	.007	.038	.359	.720
	Director_Master_or_above	.174	.057	.112	3.025	.003
	Board_Size	.007	.010	.052	.688	.491
	BoardSize_No_Meeting	.000	.001	.023	.192	.847

a. Dependent Variable: Tobin_Q

(vi) Moderating effect of board size towards the education level of board members (percentage of board members with master's degrees or above) and Tobin's Q

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.856	.062		13.860	.000
	Firm_Size	-.233	.018	-.477	-13.280	.000
2	(Constant)	.805	.143		5.639	.000
	Firm_Size	-.247	.020	-.507	-12.565	.000
	Percentage_Family_Director	-.149	.078	-.073	-1.906	.057
	Gender_diversity	-.022	.095	-.008	-.233	.816
	Percentage_Independent_Director	-.079	.184	-.020	-.430	.667
	No_board_meeting	.004	.003	.057	1.535	.125
	Director_Master_or_above	.174	.057	.112	3.034	.003
	Board_Size	.009	.007	.064	1.308	.035
3	(Constant)	.986	.155		6.364	.000
	Firm_Size	-.246	.020	-.504	-12.557	.000
	Percentage_Family_Director	-.145	.078	-.071	-1.865	.063
	Gender_diversity	-.019	.094	-.007	-.205	.838
	Percentage_Independent_Director	-.032	.183	-.008	-.177	.860
	No_board_meeting	.004	.003	.052	1.406	.160
	Director_Master_or_above	-.441	.219	-.284	-2.011	.045
	Board_Size	-.018	.011	-.134	-1.605	.109
	BoardSize_Director_Master_or_Above	.080	.027	.452	2.906	.004

a. Dependent Variable: Tobin_Q

Appendix 12 Correlation coefficients of Z-Score as dependent variable

Variables	Z-Score	Percentage of family directors	Gender diversity	CEO duality	Percentage of independent non-executive directors	Firm size	Company type	Number of board meeting	Education level of board members	Board size
Z-Score	1									
Percentage of family directors	-0.06	1								
Gender diversity	0.02	0.18	1							
CEO duality	-0.09	0.05	0.03	1						
Percentage of independent non-executive directors	0.17	0.14	0.06	-0.25	1					
Firm size	-0.19	-0.01	-0.06	0.2	0.38	1				
Company type	-0.06	-0.13	-0.05	0.02	-0.1	0.14	1			
Number of board meeting	0.09	-0.2	0	-0.03	0.07	-0.19	-0.06	1		
Education level of board members	-0.04	-0.25	0.05	0.01	-0.04	0.05	0.22	0.08	1	
Board size	-0.07	-0.14	-0.13	0.16	-0.64	0.42	-0.08	-0.02	-0.04	1

Appendix 13 Hierarchical regression analysis on the Z-Score with independent variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.703 ^a	.494	.493	1.40622032
2	.716 ^b	.512	.506	1.38741486

a. Predictors: (Constant), Firm_Size

b. Predictors: (Constant), Firm_Size, Percentage_Family_Director, Percentage_Female_Director, Director_Master_or_above, No_board_meeting, Percentage_Independent_Director, Board_Size

Appendix 13 Hierarchical regression analysis on the Z-Score with independent variables (Con't)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.897	1	8.897	22.610	.000 ^b
	Residual	235.318	598	.394		
	Total	244.215	599			
2	Regression	14.981	7	2.140	5.527	.000 ^c
	Residual	229.234	592	.387		
	Total	244.215	599			

a. Dependent Variable: Z_Score

b. Predictors: (Constant), Firm_Size

c. Predictors: (Constant), Firm_Size, Percentage_Family_Director, Percentage_Female_Director, Director_Master_or_above, No_board_meeting, Percentage_Independent_Director, Board_Size

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.190	.130		9.145	.000
	Firm_Size	-.176	.037	-.191	-4.755	.000
2	(Constant)	.392	.304		1.292	.197
	Firm_Size	-.143	.042	-.156	-3.425	.001
	Percentage_Family_Director	-.303	.166	-.079	-1.820	.069
	Gender_diversity	.139	.201	.028	.692	.489
	Percentage_Independent_Director	1.272	.391	.173	3.254	.001
	No_board_meeting	.004	.005	.034	.821	.412
	Director_Master_or_above	-.140	.122	-.048	-1.149	.251
	Board_Size	.025	.014	.096	1.752	.080

a. Dependent Variable: Z_Score

Appendix 14 Independent samples t-test between CEO duality and Z-Score

Group Statistics					
CEO_Duality		N	Mean	Std. Deviation	Std. Error Mean
Z_Score	0	169	0.676	0.704	0.054
	1	431	0.547	0.608	0.029

Independent Samples Test										
				t-test for Equality of Means T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Z_Score	Equal variances assumed	9.523	0.002	2.236	598	0.066	0.129	0.058	0.016	0.243
	Equal variances not assumed			2.098	271.409	0.087	0.129	0.062	0.008	0.25

Appendix 15 Independent samples t-test between company type and Z-Score

Group Statistics					
Company_type		N	Mean	Std. Deviation	Std. Error Mean
Z_Score	0	492	0.6	0.68	0.031
	1	108	0.498	0.387	0.037

Independent Samples Test									
			t-test for Equality of Means T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal Z_Score variances assumed	29.945	0	1.538	598	0.124	0.104	0.068	-0.029	0.237
Equal variances not assumed			2.161	273.741	0.062	0.104	0.048	0.009	0.199

Appendix 16 Moderating effect of board size towards independent variables and Z-Score

(i) Moderating effect of board size towards percentage of family director and Z-Score

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.190	.130		9.145	.000
	Firm_Size	-.176	.037	-.191	-4.755	.000
2	(Constant)	.392	.304		1.292	.197
	Firm_Size	-.143	.042	-.156	-3.425	.001
	Percentage_Family_Director	-.303	.166	-.079	-1.820	.069
	Gender_diversity	.139	.201	.028	.692	.489
	Percentage_Independent_Director	1.272	.391	.173	3.254	.001
	No_board_meeting	.004	.005	.034	.821	.412
	Director_Master_or_above	-.140	.122	-.048	-1.149	.251
	Board_Size	.025	.014	.096	1.752	.080
3	(Constant)	.292	.319		.916	.360
	Firm_Size	-.140	.042	-.153	-3.340	.001
	Percentage_Family_Director	.267	.571	.070	.468	.640
	Gender_diversity	.124	.202	.025	.617	.538
	Percentage_Independent_Director	1.245	.392	.169	3.177	.002
	No_board_meeting	.004	.005	.030	.725	.469
	Director_Master_or_above	-.135	.122	-.046	-1.104	.270
	Board_Size	.037	.018	.144	2.012	.045
	BoardSize_FamilyDirector	-.069	.066	-.156	-1.043	.297

a. Dependent Variable: Z_Score

(ii) Moderating effect of board size towards CEO duality and Z-Score

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.190	.130		9.145	.000
	Firm_Size	-.176	.037	-.191	-4.755	.000
2	(Constant)	.392	.304		1.292	.197
	Firm_Size	-.143	.042	-.156	-3.425	.001
	Percentage_Family_Director	-.303	.166	-.079	-1.820	.069
	Gender_diversity	.139	.201	.028	.692	.489
	Percentage_Independent_Director	1.272	.391	.173	3.254	.001
	No_board_meeting	.004	.005	.034	.821	.412
	Director_Master_or_above	-.140	.122	-.048	-1.149	.251
	Board_Size	.025	.014	.096	1.752	.080
3	(Constant)	.396	.304		1.303	.193
	Firm_Size	-.140	.042	-.153	-3.334	.001
	Percentage_Family_Director	-.296	.167	-.077	-1.775	.076
	Gender_diversity	.141	.201	.029	.698	.485
	Percentage_Independent_Director	1.237	.394	.168	3.144	.002
	No_board_meeting	.005	.005	.035	.833	.405
	Director_Master_or_above	-.139	.122	-.047	-1.139	.255
	Board_Size	.028	.015	.111	1.910	.057
	BoardSize_CEOduality	-.005	.007	-.037	-.780	.436

a. Dependent Variable: Z_Score

(iii) Moderating effect of board size towards percentage of female director and Z-Score

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.190	.130		9.145	.000
	Firm_Size	-.176	.037	-.191	-4.755	.000
2	(Constant)	.392	.304		1.292	.197
	Firm_Size	-.143	.042	-.156	-3.425	.001
	Percentage_Family_Director	-.303	.166	-.079	-1.820	.069
	Gender_diversity	.139	.201	.028	.692	.489
	Percentage_Independent_Director	1.272	.391	.173	3.254	.001
	No_board_meeting	.004	.005	.034	.821	.412
	Director_Master_or_above	-.140	.122	-.048	-1.149	.251
	Board_Size	.025	.014	.096	1.752	.080
3	(Constant)	.488	.307		1.590	.112
	Firm_Size	-.146	.042	-.159	-3.488	.001
	Percentage_Family_Director	-.307	.166	-.080	-1.851	.065
	Gender_diversity	-1.230	.733	-.250	-1.677	.094
	Percentage_Independent_Director	1.365	.393	.186	3.475	.001
	No_board_meeting	.004	.005	.029	.695	.488
	Director_Master_or_above	-.141	.122	-.048	-1.159	.247
	Board_Size	.009	.016	.035	.547	.585
	BoardSize_FemaleDirector	.183	.094	.290	1.941	.053

a. Dependent Variable: Z_Score

(iv) Moderating effect of board size towards percentage of independent non-executive director (INED) and Z-Score

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.190	.130		9.145	.000
	Firm_Size	-.176	.037	-.191	-4.755	.000
2	(Constant)	.392	.304		1.292	.197
	Firm_Size	-.143	.042	-.156	-3.425	.001
	Percentage_Family_Director	-.303	.166	-.079	-1.820	.069
	Gender_diversity	.139	.201	.028	.692	.489
	Percentage_Independent_Director	1.272	.391	.173	3.254	.001
	No_board_meeting	.004	.005	.034	.821	.412
	Director_Master_or_above	-.140	.122	-.048	-1.149	.251
	Board_Size	.025	.014	.096	1.752	.080
3	(Constant)	-.791	.448		-1.765	.078
	Firm_Size	-.127	.042	-.138	-3.043	.002
	Percentage_Family_Director	-.280	.165	-.073	-1.696	.090
	Gender_diversity	.077	.200	.016	.384	.701
	Percentage_Independent_Director	4.276	.929	.581	4.605	.000
	No_board_meeting	.003	.005	.024	.591	.555
	Director_Master_or_above	-.126	.121	-.043	-1.044	.297
	Board_Size	.203	.052	.794	3.902	.000
	BoardSize_INED	-.478	.134	-.559	-3.559	.000

a. Dependent Variable: Z_Score

(v) Moderating effect of board size towards number of board meeting and Z-Score

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.190	.130		9.145	.000
	Firm_Size	-.176	.037	-.191	-4.755	.000
2	(Constant)	.392	.304		1.292	.197
	Firm_Size	-.143	.042	-.156	-3.425	.001
	Percentage_Family_Director	-.303	.166	-.079	-1.820	.069
	Gender_diversity	.139	.201	.028	.692	.489
	Percentage_Independent_Director	1.272	.391	.173	3.254	.001
	No_board_meeting	.004	.005	.034	.821	.412
	Director_Master_or_above	-.140	.122	-.048	-1.149	.251
	Board_Size	.025	.014	.096	1.752	.080
3	(Constant)	.158	.323		.490	.624
	Firm_Size	-.161	.043	-.176	-3.785	.000
	Percentage_Family_Director	-.313	.166	-.081	-1.886	.060
	Gender_diversity	.165	.201	.034	.820	.413
	Percentage_Independent_Director	1.265	.390	.172	3.244	.001
	No_board_meeting	.035	.015	.265	2.243	.025
	Director_Master_or_above	-.133	.122	-.045	-1.095	.274
	Board_Size	.060	.022	.233	2.727	.007
	BoardSize_No_Meeting	-.004	.002	-.278	-2.086	.037

a. Dependent Variable: Z_Score

(vi) Moderating effect of board size towards the education level of board members (percentage of board members with master's degrees or above) and Z-Score

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.190	.130		9.145	.000
	Firm_Size	-.176	.037	-.191	-4.755	.000
2	(Constant)	.392	.304		1.292	.197
	Firm_Size	-.143	.042	-.156	-3.425	.001
	Percentage_Family_Director	-.303	.166	-.079	-1.820	.069
	Gender_diversity	.139	.201	.028	.692	.489
	Percentage_Independent_Director	1.272	.391	.173	3.254	.001
	No_board_meeting	.004	.005	.034	.821	.412
	Director_Master_or_above	-.140	.122	-.048	-1.149	.251
	Board_Size	.025	.014	.096	1.752	.080
3	(Constant)	.485	.332		1.461	.145
	Firm_Size	-.143	.042	-.155	-3.403	.001
	Percentage_Family_Director	-.301	.166	-.078	-1.807	.071
	Gender_diversity	.141	.201	.029	.698	.485
	Percentage_Independent_Director	1.296	.393	.176	3.300	.001
	No_board_meeting	.004	.005	.033	.787	.432
	Director_Master_or_above	-.454	.469	-.155	-.968	.334
	Board_Size	.011	.024	.043	.450	.653
	BoardSize_Director_Master_or_Above	.041	.059	.122	.693	.489

a. Dependent Variable: Z_Score

Appendix 17 Functions of Board Meeting (Extract from annual report of one listed company in Hong Kong)

Function of board meetings - Review the company issues

The major purpose of the board meeting is reviewing the policies, different reports and various documents of the company. The board can provide suggestions on the policies, reports and documents of the company. It includes:

- Review of business strategies of the company and discuss in the boardroom;
- Review of financial and business performance periodically, e.g., half-year and yearly;
- Review of internal audit reports and ensure the adequate internal control of the company;
- Review of risk management committee reports to evaluate the risk assessment of the company strategies;
- Review of compliance committee reports about the findings towards the obey of regulations;
- Review of the methodology and approach for the implementation of HKFRS 9 and its financial impact to ensure the completeness and accuracy of the financial reports

From the above checklist, it can know the important functions of the board are reviewed the strategies of the company. The board members need to base on their experience to provide opinions towards the strategies of the company, various reports and the performance of the company. The educational level and experience of the board members are very important to the board. They need to provide their insights to the various subject matters on the board. The company can make improvement in different aspects.

Function of board meetings - Approval transactions and documents of the company

Apart from review of the company strategies, various reports and documents of the company. The other important functions of the board is approved different subject matters of the company, such as plan, various statutory reports and policies. It includes:

- Approval of the annual budget and business plan of the company;
- Approval of the interim and annual results of the company;
- Approval of issuance of the interim and annual reports of the company;
- Approval of the proposed interim and final dividends if any;
- Approval of the reappointment of external auditor;

- Approval of the remuneration of executive directors and independent non-executive directors;
- Approval of continuing connected transactions disclosure and ensure to follow the corresponding regulations;
- Approval of the revised terms of reference of audit committee and nomination Committee;
- Approval of the revised of policies on board diversity policy and corporate governance policy;
- Approval of the dividend policy and the nomination policy of the company.

Function of board meetings - Recommendations to the board

The board meeting make recommendation on the re-election of directors, appointment of new directors and remove the director if any. Furthermore, the board meeting can also let the board members to discuss the findings of different committees.

Appendix 18 Ethical approval from University of Wales Trinity Saint David

EC534 WAI Siaw Mo 1710336 PG2-E1- APPROVED



Inbox x

Postgrad Research <pgresearch@uwtsd.ac.uk>
to me, Antje, Jill, sharlotteliu@hkma.org.hk ▾

Jan 30, 2020, 11:43 PM



Dear Siaw Mo

Re: EC534 Request for Ethical Approval

-
I am pleased to confirm that the submission of the Ethical Approval on your research '*The impact of board characteristics on firm financial performance of listed companies in Hong Kong*' has been APPROVED by the University's Ethics Committee. You may now continue with your research.

Please ensure that you are aware of, and use, the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages (<http://uwtsd.ac.uk/library/research-data-management/>).

Please do not hesitate to contact the office should you require any further information on this matter.

Kind regards,

Chris

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