THE MEDIATING EFFECT OF BOARD OF DIRECTORS FUNCTIONS ON THE RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL AND FIRM PERFORMANCE

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This thesis is dedicated to my beloved wife, Dr. Batoul Samadany and my sons, Ali and Erfan, and also to my late father and mother.

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ABSTRACT

Many factors influence a firm's performance and among these factors, intellectual capital (IC) is the most important determinant of a firm's performance. Besides IC, corporate governance (CG) elements, especially the board of directors' functions (BoDF) are other significant predictors of the firm's performance. Contemporary literature, however, remains scant on the assimilation of BoDF with IC and its components: human capital (HC), structural capital (SC), relational capital (RC) and spiritual capital (SpC) to determine firm performance. This study has filled the gap in the related literature by developing a framework which examines the mediating effects of BoDF on the relationship between IC and different dimensions of a firm's performance. The study has also identified effective BoDF as the mediator that collaborates the different dimensions and investigated the effect of IC on the overall, financial and non-financial performances. To accomplish the objectives, this study applied quantitative methodology and questionnaires were distributed to 314 top managers of high IC Iranian firms. Fitness of the measurement model and structural equation modelling (SEM) were tested. To examine the hypothesis, simple regression, hierarchical regression and Sobel test were applied. The results indicated a partial mediation role of BoDF in the relationship between IC and firm performance. The findings also indicated that IC and its components are positively linked to BoDF which is positively linked to the overall, non- financial and financial performances. IC and its components are also positively linked to the overall performance. Based on the results, BoDF mediates HC, SC and RC on the overall performance but it does not mediate SpC in the firm's overall performance. The study has shown the importance of IC in improving a firm's performance, and the role of BoDF as one of the important variables in Iranian firms which affects the relationship between IC and three dimensions of a firms' performance.

ABSTRAK

Banyak faktor mempengaruhi prestasi firma dan antara faktor ini, modal intelek (IC) adalah penentu prestasi firma paling penting. Selain IC, unsur tadbir urus korporat (CG), terutamanya fungsi lembaga pengarah (BoDF) merupakan peramal lain prestasi firma yang signifikan. Bagaimanapun, kajian terkini tentang asimilasi BoDF dengan IC dan komponennya: modal insan (HC), modal struktur (SC), modal hubungan (RC) dan modal rohani (SpC) dalam menentukan prestasi firma masih kurang. Kajian ini menutupi jurang dalam kajian yang berkaitan dengan membina satu kerangka yang mengkaji kesan pengantaraan BoDF ke atas hubungan antara IC dengan dimensi prestasi firma yang berlainan. Kajian ini juga mengenal pasti BoDF yang berkesan sebagai pengantara yang berkolaborasi dengan dimensi-dimensi lain serta mengkaji kesan IC ke atas keseluruhan prestasi kewangan dan bukan kewangan. Untuk mencapai objektif, kajian ini mengguna pakai kaedah kuantitatif dan soal selidik telah diedarkan kepada 314 orang pengurus atasan firma Iran yang mempunyai IC tinggi. Kesesuaian model pengukuran dan permodelan persamaan berstruktur (SEM) telah diuji. Untuk menguji hipotesis, regressi mudah, regressi bertingkat, dan ujian Sobel telah diguna pakai. Hasil kajian menunjukkan peranan pengantaraan BoDF yang separa dalam hubungan antara IC dengan prestasi firma. Dapatan kajian juga menunjukkan IC dan komponennya berkaitan secara positif dengan BoDF yakni secara positif dikaitkan dengan keseluruhan prestasi kewangan dan bukan kewangan. IC dan komponennya juga berkait secara positif dengan prestasi keseluruhan. Berdasarkan hasil kajian, BoDF memperantarakan HC, SC, dan RC ke atas prestasi keseluruhan tetapi ia tidak memperantarakan SpC dalam prestasi keseluruhan firma. Kajian ini menunjukkan kepentingan IC dalam mempertingkatkan prestasi firma dan peranan BoDF sebagai satu daripada pemboleh ubah penting dalam firma-firma Iran yang mempengaruhi hubungan antara IC dengan tiga dimensi prestasi firma.

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AMOS	-	Analysis of MOment Structures
BoDF	-	Board of Directors' Function
BP	-	Business Perspective
BSC	-	Balanced Score Card
CEO	-	Chief Executive Officer
CG	-	Corporate Governance
CP	-	Customer Perspective
DV	-	Dependent Variable
EV	-	Extraction Variance
FL	-	Factor Loading
FP	-	Financial performance
HC	-	Human Capital
IC	-	Intellectual Capital
IC	-	Intellectual Capital Management
IL	-	Innovation and Learning Perspective
IV	-	Independent Variable
KM	-	Knowledge Management
MV	-	Mediator Variable
NFP	-	Non-Financial Performance
OECD	-	Organization for Economic Cooperation and Development
OFP	-	Overall Financial Performance
RBV	-	Resource Based View
RC	-	Relational Capital
RDT	-	Resource Dependency Theory
ROA	-	Return on Asset
ROI	-	Return on Investment
SC	-	Structural Capital
SEM	-	Structural Equation Modelling
SpC	-	Spiritual Capital
SPSS	-	Statistic Package Science Software

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CHAPTER 1

INTRODUCTION

1.1 Overview

The growing realization on the significance of intellectual capital (IC) as an asset by the firms globally has made it a universal phenomenon. IC entails human capital (HC), structural capital (SC), relational capital (RC) (1998; 1999b, 1999c; Edvinsson, 1997; Roos *et al.*, 1998a) and recently spiritual capital (SpC) (Ismail, 2005a). Roos *et al.* (2005) elucidate that IC comprises of non-monetary and non-physical resources of a firm, which are completely or partially controlled by the firms to create value for the firm. IC, in last two decades, has been defined as valuable intangible resources, which positively affect the firm economic value (Bontis, 1999c) and firm performance (Bontis and Cabrita, 2008; Bontis *et al.*, 2000a). Intellectual capital is a critical, limited and valuable resource (Bontis and Cabrita, 2008). The realization of IC as an asset by firms is supported by the resource-based perspective, which advocates the generation of values through the management of scarce resources (Bontis and Cabrita, 2008; Roos *et al.*, 2005).

As IC is a critical and valuable resource, the board of directors is considered as one of the most important components of IC (human capital) which has a significant role to play as a representative of shareholders. This is because they jointly create and deliver extra, tangible value to the firm. In this regard, Lawal (2012) asserted that the firm internal governance mechanism is the 'heart' of corporate governance, which determines the firm performance; where the Board of directors as part of the governance mechanism and the agent of the shareholders are responsible to direct, manage and supervise the affairs of the business in the best

shareholders' interest (Kaen, 2003; Kosnik, 1987). Defining explicit responsibilities and implicit functions of the board of directors are significant components of corporate governance (CG). Although, they are generally not involved in routine business operations, their role in monitoring and controlling the affairs of the business (resource management) to protect shareholders interest is critical (Monks and Minow, 2008; Rezaee, 2002), as it links directly to determine the fate and performance of the firm in the form of providing inputs for decision making, strategy formulation, policy making, advising, and the selection of Chief Executive Officer (CEO) (Monks and Minow, 2008; Rezaee Zabihollah and Richard, 2009). The resource provision function is another function of the board that provides the firm a range of resources like financial resources, information and so on (Withers, 2011). Functions and responsibilities refer to the member's abilities, while firm performance is linked to different types of capital, especially, IC, which determines the effectiveness and efficiency of CG (Nicholson and Kiel, 2003).

Contemporary literature on IC highlight the significance of IC in connection to firm performance, but literature remains scant on the role of the board of directors functions (BoDF) in predicting firm performance. This study has filled the gap in literature by developing a framework, which aimed at examining the BoDF as a mediator amid IC and its components and firm performance in Iranian high IC firms.

1.2 Background of the Study

Firms in the dynamic business environment, especially in the capitalist system focus more on resource allocation and resource management to create greater value for shareholders (Page, 2005). In other words, shareholder value is the sum of all strategic decisions that affect the firm's ability to efficiently increase the firm performance over time (Page, 2005). For many years, companies have measured their performances in terms of profit or earnings per share (Niven, 2006). As long as firm performance have existed, the traditional method of measurement has been financial. Niven (2006) discussed some of the limitations financial measures possess. Financial measures are not consistent with today's business realities and also these measures are not relevant to many levels of the organization. These metrics are of

little assistance in providing early indications of customer, quality, or employee problems or opportunities (Kaplan and Norton, 2007; Niven, 2006). However, growing dissatisfaction with these measures has led to a whole new array of metrics being developed and promoted under the banner of shareholder value. Before terms like "human capital," "intellectual capital," and "intangible assets" entered the business lexicon, there was another metaphor sweeping across firms: the employee as an asset. Accordingly, the percentage of assets change from tangible to intangible (Tomo, 2011). Thus the great value of firms placed in their intellectual capital and accordingly shareholder value measures has changed from financial indicators such as profits and towards others indicators such as customer, suppliers, learning and so on. Given these limitations and the growth in prominence financial measurement and its limitations of intellectual capital, both business and investment communities have placed ever-increasing emphasis on non-financial indicators of performance.

The Balanced Scorecard (BSC) was developed by Kaplan and Norton (2007) as new methods of performance measurement that measure both financial and non-financial performance. The impetus for the study was a growing belief that financial measures of performance were ineffective for the modern business enterprise. The group discussed a number of possible alternatives, but settled on the idea of a Scorecard featuring performance measures capturing activities from throughout the organization customer issues, internal business processes, employee activities, and, of course, shareholder concerns.

Recognition of IC as a significant resource for creating value now dominates firm's patterns of strategy formulation (Kaen, 2003). Marr (2005) described various perspectives of IC, which ranges from economics, strategy, accounting, finance, marketing, human-resource management to information systems and legal position perspectives. All these perspectives of IC facilitate the firm endeavors of creating value for stakeholders (Bontis, 2002a; Kong and Thomson, 2009; Stewart, 1997a; Sullivan, 1998) and are also recognized as decisive determinants of firm competitive advantage in strategic management discipline (Bontis and Cabrita, 2008). Kong and Thomson (2009) together with Stewart (1997a) and Bontis (1999b) alluded that IC is collective knowledge, which is rooted in employees, organizational procedures and

network relations, and all these intellectual resources facilitate firms in competitive advantages and creating value.

Similarly, Ashton (2005) designated that a deeper understanding by employees influence the ability and power of the employees, their performance and resultantly firm performance. Though, traditionally, spending on developing human resource was always thought of as cost, rather than an investment, but firms have recently deemed HR as capital and investment not as a cost (Petty and Guthrie, 2000b) and correspondingly, the sources of production are transformed from physical to IC (Marr, 2005). Hsu (2009) averred that accumulation of IC is valuable for firms to create competitive advantage, value creation and firm performance. Similarly, Stewart (1997b) and An *et al*. (2011) suggested that IC is a knowledge resource that positively affects firm value and maintain the firm competitive advantage. This signifies that firms must balance between firm or board's IC and CG system to ensure continuous performance (Nicholson and Kiel, 2003).

Further, CG as contended by the literature is a significant indicator of performance (Aljifri and Moustafa, 2007; Khan *et al.*, 2011), as good governance positively influences firm performance (Cheng, 2008; Wu *et al.*, 2012). The phenomenon of governance is comprised of governing bodies, top management teams and internal and external auditors (Rezaee and Riley, 2009); where the board of directors is recognized as the gatekeeper of the firm's governance. They are responsible for firm decisions and play a key role in creating value for both firm and stakeholders (Rezaee and Riley, 2009; Tricker, 2009a).

Nicholson and Kiel (2003) asserted that good and effectual CG depends on the different set of board functions, as functions refer to the members relative abilities that determine the effective and efficient CG (Nicholson and Kiel, 2003). Correspondingly, Tricker (2003) argued that a well-constructed board have a wide-range of relative competencies, where power and ability to perform assigned functions depends on the member's intellectual capacity (Tricker, 2003). Human, relational, structural capital (Bontis, 1998; 1999b, 1999c; Edvinsson, 1997; Roos *et al.*, 1998a) and spiritual capital (Ismail, 2005a; Sofian and Earnest, 2011) are

important components of IC, which are rare, precious, expensive to emulate and non replaceable (Kong and Thomson, 2009; Roos *et al.*, 2005). Thus, firms, which are embedded and prepared with resources that are valuable, rare and costly to imitate, enjoy sustained competitive advantage (Barney and Hesterly, 2006; Roos *et al.*, 2005).

Accordingly, the adequate construction of the board requires company's shareholders to pay serious attention to the abilities (IC) of the board members. (Monks and Minow, 2008; Rezaee and Riley, 2009), so that the static board can be transformed to a dynamic board (Nadler and Nadler, 2004; Nadler *et al.*, 2006; Nicholson and Kiel, 2004a) to enhance firm performance. Furthermore, powerful employees (human capital) are deemed the true driver of the firm, who reinforce the value creation process and provide a foundation for the firm to acquire competitive advantage over competitors. This requires authority and power be appropriately transferred to employees and management team to perform and accomplish the firm targets (Nicholson and Kiel, 2004c). It is contended by Monks and Minow (2008), and Saleh (2008) that firms need loyal, committed and dynamic board for the continuous value creation and long term business performance. Contemporary literature illustrates conflicting results on the relationships between CG and performance (e.g. Aljifri and Moustafa, 2007; Hilb, 2005; Kalyta, 2010; Khan *et al.*, 2011; Page, 2005) and the dynamism of the board and firm performance (e.g. Adjaoud *et al.*, 2007; Alchian and Demsetz, 1972; Gkliatis, 2009; Kula, 2005; Lawal, 2012; Nicholson and Kiel, 2007). These differences in the reported results are attributed to the difference in selection of methodology, variable selection, model construction, nature of business and traits of board members (e.g. Bontis and Cabrita, 2008; Bontis *et al.*, 2007; Ling, 2011a; Marr and Spender, 2004; Martin *et al.*, 2011; Rudez and Mihalic, 2007).

Despite of the contemporary literature which discusses the direct effect of IC, CG and dynamic board in connection to firm performance, literature remains scant on the issue, which discusses the role of IC in board functions as a determinant of CG in connection to firm performance (e.g. Kalyta, 2011; Lester, 2003; Nadler *et al.*, 2006; Nicholson and Kiel, 2004a; Nicholson and Kiel, 2003).

In relation to the above, the concepts of IC, CG, BODF, and firm performance and their applications to business firms in western contexts have been discussed for many decades (Bontis, 2002a; Bontis, 1998; 1999b, 1999c; Edvinsson, 1997; Kong and Thomson, 2009; Nadler and Nadler, 2004; Nadler *et al.*, 2006; Nicholson and Kiel, 2004a; Rezaee and Riley, 2009; Roos *et al.*, 1998a; Stewart, 1997a; Sullivan, 1998; Tricker, 2009a). Nevertheless, these constructs are under researched in Iran. While research has been extensively conducted on these concepts in numerous Asian contexts, for instance, Malaysia (Bajuri, 2010; Bontis *et al.*, 2000a; Ismail, 2005a; Saleh, 2008; Sofian and Dewi, 2009; Zulkafli *et al.*, 2005), China (Shen and Long, 2011; Yi and Davey, 2010), and Taiwan (Ling, 2011b; Shih *et al.*, 2010; Tseng and James, 2005; Wen-Ying and Chingfu, 2005; Wu *et al.*, 2012), Turkey (Kula, 2005; Zerenler *et al.*, 2008), research on these constructs in Iran's context and published in English language literature has been lacking. While Iran's economy is developing rapidly, management and organizational studies still borrow theories and concepts developed in western countries, particularly those based on well-refined theoretical foundations and empirical methodologies. Therefore, this study was designed to overcome the paucity that exists of examinations of the relationships between IC and its components, BoDF and FP in the context of Iran.

The Islamic Republic of Iran is a middle income country with a population of over 78 million. It is the second largest economy in the Middle East and North Africa (after Saudi Arabia). Its gross domestic product (GDP) is approximately US$400 billion in 2011, with an average annual growth rate of 3.5% (TrendNews, 2012 ; UNDP, 2012). Iran’s economy is a combination of service ventures and small-scale private commerce, village agriculture and state proprietorship of other large enterprises and oil. Due to this reason, Iran has gained a prominent place in the international energy production of natural gas and oil. Iran has also been one of the leading producers in the food and agricultural goods, construction materials, home appliances, car-manufacturer and transportation, information technology, pharmaceuticals, power and petrochemicals in the Middle East and worldwide. In lieu of Iran’s Vision 2025, the long-term technology and science programs have been developed. Vision 2025 has envisioned Iran to be a developed country by then. Hence, the government of Iran has been organizing and performing continuous economic programs in attaining the goals of Vision 2025. In doing this, the Iran

government has allocated billions of [Iranian Rial] for the development of high proficient manpower in the new economic epitome proclaimed in the recent years (UNDP, 2009, 2012).

Since Iran is a newly transformed market-driven economy (TrendNews, 2012), business management theories and research based on a market economy have not been established until recent years when western management theories have been massively imported. Even today, although Iran's management schools and their academic associates have become larger in scale and number, Iranian management science adaptation to the new economic system are not yet fully fledged. Its increasing presence on the world economic stage and the dramatic enhance of business education have not affected the fact that Iran remains one of the important regions that has been studied the least by management scholars. Nevertheless, researchers have recognized Iran as a legitimate empirical context, important for filling gaps in the worldwide management and organization knowledge. Accordingly, this study intended to fill the gap by examining the influence of IC using BoDF as mediators on firm performance in Iran, particularly in the high IC firms.

High IC firms are defined by Usoff *et al.* (2002) as firms that contain high IC value that are named and considered as firm with high strategic resource. In today's information-age economy, the majority profits of these kind of firms are depending on their knowledge and innovation (Edvinsson and Sullivan, 1996). Computer companies and high-technology firms, software firms, and manufacturers of new or differentiated products are known as high IC firms in the product sectors. Law firms, consulting firms, financial services firms and media companies (e.g. Newspapers, periodicals, and television and radio organizations) are categorized as high IC firms in the service industry (Edvinsson and Malone, 1997b; Sofian *et al.*, 2006). The market value of firms have routinely exceed than the tangible assets recorded on the balance sheet. It has been proposed that this exceed amounts approximates a firm's intellectual capital (Dzinkowski, 2000) stated that a firm's size, number of employees, level of firm performance and kind of industry are attitude towards the importance of IC. Usoff *et al.* (2002) indicated that firms with larger employees departments and amount of revenues believe that IC is more important than other

firms. So high IC firms may be better able to invest resources necessary to manage IC. They also suggested further research is needed to methodically explore what characteristics are associated with firms that more highly value the potential contributions of IC. Finally, they believed in achieving long-term success, firms need to develop procedures that capture IC and change their traditional performance measurement systems.

Therefore, based on the above discussion, high Iranian IC firms were mentioned as the target population of this study. According to literature classification, a total 314 Iranian high IC firms have been identified from two sources; Tehran Stock Exchange (TSE) and Industrial Management Institute (IMI). In 2013, based on some indices such as amount of the firm's sales, introduces big and top Iranian firms in the every year, four hundred firms were selected by IMI as top and big Iranian firms. For employees, departments for the amounts that were coincident to define by Usoff *et al.* (2002), big and listed firms as high IC firms are identified and grouped based on their nature of operations to 8 groups (Banking, Financing and leasing, Investment and Finance, Insurance and retirement, Consulting, Computer Software, Media Companies, and Chemical and pharmaceutical products). The members of top management teams (as respondents) from these firms were asked to participate in the survey because they were involved in managing and leveraging the Intellectual Capital of their firm.

Cultivating from the above discussion, in this study three kinds of variables were considered regarding Iranian high IC firms that are: (1) IC as the independent variables, which consist of SpC, HC, SC and RC (2) Firm performance is the dependent variable that consists of financial, non-financial and overall performance, and (3) BoDF plays mediating role in the theoretical framework of this study. It is expected that the results of this study disclose the extent to which component of IC is/are significant for the Iranian high IC firm. The findings of this study also open the new pathway for the main decision makerintoof these firms.

1.3 An Overview of Iranian Economy

The economy of Iran is a mixed and transition economy with a large public sector. Some 60 percent of the economy is centrally planned (PressTV, 2012). It is dominated by oil and gas production, although over 40 industries are directly involved in the Tehran Stock Exchange (TSE), one of the best performing exchanges in the world over the past decade (Lynn, 2014). TSE was incorporated in 1967 with six listed firms and experienced three different periods of time. First from 1967 to 1978, the number of listed firms increased to 105 companies so that TSE experienced good condition in term of investment in the stock exchange and both companies and investors were attracted to share trading. Second from 1978 to 1988, TSE was severely affected by two major events, the Islamic revolution and Iran-Iraq war. At this time dramatically the value and number of existing firms reduced. Third period was from 1988 to 2011, TSE was full of ups and downs. Since 1988, the private sector and most companies have been controlled by government and number of companies listed on TSE did not significantly increase or decrease. From 2001 onwards, the proposed implementation of Article 44 relating to the transfer of companies to the private sectors, thus the number of companies listed on TSE increased. During 2001 to 2004, TSE's return on investment increased and reached up to 131.4 percent in 2003 while it experienced a very difficult situation in 2007. The number of listed companies increased from 56 in 1988 to 422 in 2006 and then reduced to 341 in 2010.

The list of industries and enterprises in comparison with other unlisted fiirms create a Guidance which can provide a useful guide for policy-makers and financiers, and managers. Based on this mission and aims, Iranian Ministry of Industry and Trade via Industrial Management Institute (IMI) provides a list and ranks the top companies among the listed and unlisted companies in Iran. This list is inspired by the organization by providing clear and useful information and statistics about the country's economic institutions, business and economic environment. It provides more clear information to managers, policy makers and researchers, helps to identify business environment for better understanding of the scale structure of the financial industry and large businesses.

Accordingly, IMI has released the list of 400 leading Iranian companies in terms of some indices every year as large and top companies. These indicators include some indices such as; Sales growth, Sales per capita, Finance, Growth, Finance, Number of employees, Employment growth, Profitability, Profit Growth, Return on Sales, Return on assets and Return on equity. First 100 firms were introduced as Top companies based on the determining criteria. Later, 300 companies of Iran were ranked and then divided into three groups of hundreds. Each of these groups of companies in the rankings are based on other criteria. The top ten leading companies of hundreds of companies that have grown over the past three years are selected. According to the ranking, these companies as top and large firms are awarded by IMI as representative of Ministry of Industry and Trade that is the most important motivation for the BoD, CEO, managers and employees with this kind of firms.

According to article 44 of the Constitution of Iran, the economy of Iran consists of three sectors, namely the state, the cooperative, and the private sectors. Accordingly, the growth and development of Iranian firms are strongly related to their organizational sector, economical state and governmental system. In addition, the capital structure of Iranian companies are also determined by the sectors and their financial factors or financial decisions to invest. Over the past three decades, an increasingly changing market-oriented corporate sector has driven growth in the Iranian economy; the factors, financial policies, capital structures, institutions, managerial behavior and knowledge, indicating that the 'nature' of the Iranian firms have evolved (Bagherzadeh, 2004). This change in business gives rise to know the relationships between levels of IC and BoD determining the financial and non-financial factors of the Iranian firms.

Before the Islamic revolution, based on growing of oil price, oil income of Iran incredibly increased in 1976. This situation led to some improvement in Iran so that economic development of the country rapidly achieved a significant economic modernization. However, this rapid growth dropped by 1978 and led to capital flight in the range of 30 to 40 billion US dollars by 1980. By the end of the 20th century, the Iran economy faced with many obstacles, such as market forces, global financial

crisis, war and international sanctions (Gheissari, 2009). In spite of international sanctions, in recent decades, Iran has experienced a wide range of changes. These include shifts in the relationship between urban and rural economies, the nationwide growth of the middle class and ensuing social mobility, a higher literacy rate along with the expansion of educational institutions, establishment of High-Tech firms, development of internet, network, and new complexities and expectations in gender relations all within the context of the country's evolving domestic and international politics (Esfahani *et al.*, 2013).

Notwithstanding the international sanctions relating to the nuclear program of the Iranian government as well as the global financial crisis in 2008, the value of Iranian firms has kept the growth (Fassihi, 2010; Rhoads and Fassihi, 2011) on its moderate stage. According to International Monetary Fund report of 2010 and World Bank statistics of 2011, Iran's economy was the eighteenth largest economy in the world with regard to purchasing power parity. This economy is changing from a centrally planned to a free market with a large public sector along with an estimated of 50 percent of the economy. According to the Economic report of 2009, the annual growth rate of industrial production in Iranian companies was ranked 39th in 2008. This growth rate has leapt to 28th place out of 69th place from 2008 to 2009 (Times, 2012). The financial factors, such as growth, profit and tax rates (Bagherzadeh, 2004) made differences in a date set of capital structure decision in comparison with developed countries.

Despite the fact that, it is clear that Iran's oil and gas reserves will be depleted at the end, this is proned to happen after a generally long stretch. Indeed, in the course of recent decades the degree of Iran's oil trade incomes to Gross domestic product (GDP) has fluctuated around 36 percent (Esfahani *et al.*, 2013). This ratio indicates that the Iranian economy is mostly dependent on oil income. As such, rather than follow the approach in the 'Dutch disease' and 'resource curse' literature, which considers the revenues from the resource to be intrinsically temporary and focuses on the relatively short term implications of the resource discovery, it makes more sense to view the income from other resources that are permanent for the purpose of macroeconomic analysis over the medium term (Esfahani *et al.*, 2013).

Specifically, if the oil income to output ratio is expected to remain high and stable over a long period (Esfahani *et al.*, 2014), the income should be invested int he country's infrastructure in particular in the knowledge based companies or Iran high IC firms which can potentially add value and create competitive advantages. This indicated that the structure of capital in Iranian firms needs to shift from tangible to intangible assets or ICsince it promotes productivity improvement and creativity that positively influence firm performance. In the current era of technological revolutions and knowledge based economies, IC is known as an extremely important capital for the firms (Recalde, 2011; Tomo, 2011). In this sense, IC, or knowledge assets, as the fourth factor of production, is replacing the traditional ones – labor, land and financial capital. So firms should use IC to attain sustainable competitive advantages (Bontis, 2002; Sullivan, 1998; Stewart, 1997). Besides IC, corporate governance (CG) elements, especially BoD functions (BoDF) are other significant predictors of the firm performance. IC and BoD are two fundamental resources that have positive effect on firm performance (Kiel and Nicholson, 2005; Nicholson and Kiel, 2007; Nicholson and Newton, 2010). This is because they jointly create and deliver extra, tangible value to the firm. Thus, Iranian firms must disclose and manage them appropriately.

Until recently, findings derived from analyzing data sets of developing countries have not been found. A few studies on transition of the Middle East countries such as Iran have recently been published (Ahangar, 2011; Ahmadi *et al.*, 2013; Banimahd *et al.*, 2012; Mashayekhi and Bazaz, 2008; Moradi *et al.*, 2013; Nazari *et al.*, 2009; Zare *et al.*, 2013). However, the approaches, methods, time periods and analysis of IC, BoDF and firm performance variables applied in the studies provided scanty information on how BoDF mediates the relationship between IC and firm performance in the Iranian high IC firms. In order to overcome the issue of inadequacy of information, this study has applied most relevant theoretical and empirical approaches and methods with a wide range of the time period and the variablesexploring the relationship between IC and firm performance mediated by BoDF in a developing country, Iran. Iran was selected because, from an institutional perspective, it differs substantially from the other developing countries (Mashayekhi and Bazaz, 2008). Iran, located in the Middle East, a politically troubled and unstable region of the world, have unique environmental characteristics. Searching through

different databases, no related study on the mentioned variables (IC, BoDF and firm performance) among the surrounding countries, such as Saudi Arabia, Kuwait, Jordan, Egypt, or Syria. Could be found. Moreover, Iran is a strict Islamic country. As a result, its social and business activities are based on fundamentalist religious laws and regulations. When selecting or promoting high-ranking officers and board members, Iranian firms place significant emphasis on the officers' faith and acceptance of traditional Islamic customs. This emphasis is different from countries where specialization, education level, or political affiliation guides the board selection process. In addition to the role of religion, the origin of Iranian civil law influences corporate governance (Mashayekhi and Bazaz, 2008). Unlike countries with more developed economies, the main objective of Iranian trades does not appear to be creating value for the shareholders. In Iran, there is a more varied objective based on the Islamic Shariah Law. High Iranian IC firms were selected as unit of analysis of the study because these kinds of firms are depending on knowledge and innovation created by their human resource (Mashayekhi and Bazaz, 2008). Furthermore, the added advantage of data from the group of High IC companies is that, they have top managers with high academic qualification and experience, who have the information about the firms.

1.4 Problem Statement

Intellectual Capital (IC) in the last decade has been recognized as a decisive resource for firms to perform and acquire competitive advantage (Bontis, 2002a; Kong and Thomson, 2009; Stewart, 1997a; Sullivan, 1998). Several scholars have evaluated the role of the IC in connection with firm performance and value creation capabilities of the firm (Edvinsson and Malone, 1997b; Roos *et al.*, 1998b; Sullivan, 1998; Sveiby, 1997), and the phenomenon of IC have now been recognized a worthy idiom in both theoretical and empirical research (Maditinos *et al.*, 2010) even in the presence of conflicting findings. At the outset of the 21st century, research on IC was limited to the context of large scale organizations, but recently the horizon of research on IC and its components (HC, SC and RC) in connection with firm performance has been on a larger set of locating conditions marking board of director’s function as a vital determinant of corporate governance (e.g. Bontis and

Cabrita, 2008; Bontis *et al.*, 2007; Ling, 2011a; Marr and Spender, 2004; Martin *et al.*, 2011; Rudez and Mihalic, 2007). In addition to three components of IC, Zohar and Marshall (2004b) asserted that SpC is another significant component of IC, as inspirit aptitude with great ideas is significant for the firms to acquire the opportunity and competitive advantage and is very relevant to the context of underdeveloped and developing economies. They contended that SpC takes the broadening of capital as it is associated with wealth, profit, and power and it also transcends the usual notion of capital altogether (Zohar and Marshall, 2004b). Correspondingly, Ismail (2005a) averred that SpC is a new component of IC and is positively linked to various dimensions of performance; this includes operating efficiency, firm performance, and organizational leadership.

Parallel to the above, there also is an increasing literature concerning the relationships between Corporate governance (CG) and performance (e.g. Aljifri and Moustafa, 2007; Hilb, 2005; Kalyta, 2010; Khan *et al.*, 2011; Page, 2005) and BoDF and performance (e.g. Adjaoud *et al.*, 2007; Alchian and Demsetz, 1972; Gkliatis, 2009; Kula, 2005; Lawal, 2012; Nicholson and Kiel, 2007). Further, Jamali *et al.* (2009) and Keenan and Aggestam (2001) stated that most of the studies which have been carried out formerly, concentrated on the relationship between CG and financial and physical capital compared to linkages between IC and CG. Furthermore, the relationship between the board of directors and firm performance has been studied by many. But, the historical perspective only viewed the association of BoDF to performance in a static context, which seems like "ornaments on the corporate Christmas tree" (Gillespie and Zweig, 2011; Gomez and Moore, 2009; Nicholson and Kiel, 2003). Evidences suggest that in most cases boards concentrate on consultation to the management rather being the agents of the stakeholders and most boards have never reached near to their potential in monitoring and advice, which they are expected to provide on behalf of the shareholders (Gillespie and Zweig, 2011, p.xi). This creates a situation of distress for the organization, especially in the era of innovation, which demands board of directors to be dynamic constituents of the governing body of CG for the firm to enhance firm performance and acquire competitive advantage (Nadler and Nadler, 2004; Nadler *et al.*, 2006; Nicholson and Kiel, 2004a).

Despite the growing investigation and realization on the issues concerning firm performance; this includes board of directors' functions and IC (Petrovic, 2008) literature, which debates the effect of IC in board of directors' functions as a significant factor of CG in linking to firm performance remain scant (e.g. Kalyta, 2011; Lester, 2003; Nadler *et al.*, 2006; Nicholson and Kiel, 2004a; Nicholson and Kiel, 2003) especially in the context of high IC firms in developing and conservative economies like Iran.

Recently, Yeganeh et al. (2014) found that in Iran there is a difference between private and public insurance companies in terms of IC as private insurance companies are more advanced in this regard. The authors also determined that among the components of IC, human capital plays a major role in insurance companies as knowledge intensive organizations, and is considered to be the most important competitive advantage factor in today's knowledge-based economy. Their findings also indicated that the type of ownership of the insurance companies as Iranian high IC firm only has a significant effect on HC and has not any significant effect on SC and RC (Yeganeh *et al.*, 2014). While, the study of Meihami et al. (2014) showed that IC in general has a significant positive influence on its financial and market performance of Iranian companies, Alipour (2012) suggested that value added IC and its components have a significant positive relationship with firms' profitability, and Mobasheri (2010) indicated that most Iranian studies concerning IC merely provided a listing about the location of the Iranian firms relative to international terms, but very few studies have actually utilized some measures of reporting and managing IC.

In this respect, although in recent years IC has become an interesting subject among Iranian researchers (Ahangar, 2011; Ahmadi *et al.*, 2013; Ahmadi *et al.*, 2011; Bani *et al.*, 2014; Khani *et al.*, 2011; Mehralian *et al.*, 2013; Meihami *et al.*, 2014; Rafiee and Mosavi, 2010; Yeganeh *et al.*, 2014), studies on IC in high IC firms in Iran were scarce. Indeed, there were a few studies that tried to utilize some measures of reporting and managing of IC in Iran, such as Moslehi et al. (2006), Sharifi and Taleghani (2011)and Bani et al. (2014). Thus, the dearth of empirical research on the Iranian high IC firms affects the generalisability of the findings from earlier studies to this kind of firms.

In light of the above, it could be concluded that the existing literature on IC is inconclusive; thereby indicating that the high IC firms in Iran need an in-depth investigation. Contemporary literature discussing IC reports that Iranian high IC firms are highly under explored. Therefore, this study has filled this knowledge gap by empirically examining the influence of IC and its components on firm performance through the mediating functions of the board of directors in the Iranian high IC firms. The issues related to the proposed relationships, which this study has examined are discussed next.

1.5 Impacts of Intellectual Capital on Firm Performance

Most literature on intellectual capital proffers significant support that IC and its components are the corner stone factors of firm success, competitive advantage and firm performance (Bontis, 1998; Bontis *et al.*, 2000a; Chiung-Ju *et al.*, 2011; Ismail, 2005a; Ismail and Songip, 2006; Mohd-Saleh and Che Abdul Rahman, 2009; Namvar *et al.*, 2010b; Nazari, 2010; Saleh, 2008; Seleim *et al.*, 2007; Sharabati *et al.*, 2010).

Literature indicates that IC comprises of three components; HC, SC, RC or customer capital (Bontis, 1998; Bontis, 2003; Bontis and Cabrita, 2008; Bontis *et al.*, 2007; Stewart, 1997a), while Ismail (2005a) in his thesis extended the model of IC to include SpC. All four components of IC are referred in literature as significant predictors of performance, for instance, Bontis *et al*. (2007) examined the impact of HC on firm performance in 38 software firms in Egypt and reported the positive impact of HC on firm performance. According to Bontis (2000a; 2007), HC is the largest and most significant intangible asset because it ultimately provided services for the customers based on their needs and wants in order to get better satisfaction. Likewise, Dooley (2000) also reported the positive correlation between the quality of developers and volume of market shares in the software industry. The results of these studies are supported by the evidence provided by Edvinsson and Sullivan (1996) who contended that firms use knowledge as a source of competitive advantage and derive profits from the commercialization of the knowledge created by their human resource.

In relation to the above, Stewart (1997a) defined SC as the "knowledge that does not go home at night" is the know how that is incorporated into processes and intellectual property. Consequently, from his point of view, SC is more important than the HC and as such should be in the spotlight as it belongs to the firm as a whole. Recently, Suraj and Bontis (2012) assessed how firms leverage IC as a strategic resource for creating competitive advantage in Nigerian telecommunications firms as high IC firm. The results indicated that firms have frequently emphasized through the use of customer capital, exemplified by market research and customer relationship management to boost their firm performance. Whereas, Wen-Ying and Chingfu (2005) argued that firm performance do not depend only on any single component of IC, though HC has a weighted influence on firm performance (Nicholson and Kiel, 2004a; Shih *et al.*, 2011).

In the light of the above discussion, this study sought to determine which of the components of IC significantly is important in Iranian high IC firms. In this study, IC is divided into four components (HC, SC, RC and SpC) and all the four components of IC have been treated in this study as predictors of firm performance thus, the issues put forward were:

- Does IC significantly influence firm performance (OFP, FP and NFP) in Iranian high IC firms?
- Do IC components (HC, RC, SC and SpC) influence the overall firm performance?
- Which of the IC components has the most effect on the overall firm performance?

1.5.1 Intellectual Capital and Board of Director's Functions

Marr (2005) asserted that firm core performance is always based on capacity and abilities of the firm human capital and the human-resource perspective suggest that the board of directors as firm prime resource encompasses capabilities that are referred as firm IC and coordinates directly and indirectly to the performance. Ong and Wan (2008), Gomez and Moore (2009), Gillespie and Zweig (2011) and Nicholson and Kiel (2003) revealed that traditionally board of directors assume

passive roles in the firm, but the emergence and development of new media and authority of shareholders, they are now pressured to play a more dynamic role in the corporate affairs (Ong and Wan, 2008). The transition in the perceived role of the board of directors require on the part of board members to learn and inculcate new skills to stay competitive as a member and contribute meaningfully in enhancing the firm performance. Stevenson and Radin (2009) considered the knowledge and skills that influence the BoD to be HC as recognised from relational ties developed with other BoD members as social capital and network ties that lead to firm benefits and may also lead to other values such as trust between members. On a similar vein, Salmon (1992), Hermalin and Weisbach (2010; 2003), and Jamshidy et al. (2014) conducted that having an effective BoD need to consider the presence of IC components. Therefore, they concluded that IC influenc the BoD style so that they can change from being a "static or passive board" or "board" to a "dynamic and active board"; from a "rubber-stamp board" to a "professional board" (Hermalin and Weisbach, 2003; Jamshidy *et al.*, 2014; Salmon, 1992).

Nicholson and Kiel (2004a) indicated that board of directors to improve their abilities, they must pay emphasis on the development of IC to serve as an active and dynamic member of the board. According to the literature, most authors considered the three components of IC, however spiritual capital should also be considered by the firms as a new component of IC. Nicholson and Kiel (2004a) and Nicholson and Newton (2010) state that this perspective integrates major theories of CG, which links the board effectiveness with four functions, including Monitor and control, Access to resources, Advice and Counsel, and Strategizing. The literature illustrates that various board functions identified by different authors are similar to the classification of Nicholson and Kiel (2004a) and Nicholson and Newton (2010), this includes; monitoring and control, access to resources, advice and counsel, and strategizing. In addition to that contemporary literature suggests that CEO as an informed person, who plays an important role in the running of a firm; he or she must also be considered as a bridge between the firm and board of directors and selection of CEO by the board is referred as an additional function of the board (e.g. Eisenberg, 1969; Monks and Minow, 2008). Moreover, Kalyta (2011) advocated that a certain link between IC and firm's directors is ignored by experiential researches. Lester (2003) argued that many of the previous studies are limited to the

consideration of HC, executives and their compensation in connection to the firm performance, and ignored the application of general managerial skills and their linkage to firm performance. Whereas, Keenan and Aggestam (2001) argued that traditional research and practice associated with CG was limited to the context of financial and physical capital, and the relationship between IC and governance remain unexplored. Recently, it has been argued by the literature that the nature of the firm performance in the future will largely be determined in connection with the performance of the board (Bird, 2004).

All these classic and contemporary studies proffered incomplete insight and awareness about the effects of IC on the functions of the board of directors. Therefore, the issues put forward in this study were:

- Is there a significant relationship between IC and BoDF in Iranian high IC firms?
- Which of the IC elements has most effects on BoDF in Iranian high IC firms?

1.5.2 Board of Directors Function and Firm Performance

Nicholson and Kiel (2004a) pointed out that most researches on CG focus on one specific function of the board; for instance, monitoring as a function of board is supported by agency theory, providing access to resources as a function of the board is sustained by resource dependence theory and advising to management and strategizing as functions of the board are supported by stewardship theory (Nicholson and Kiel, 2004a). In accordance with agency theorists, Gkliatis (2009) argued that the key function of the boards is monitoring the firm management. Further, Kula (2005) focued on the three board functions (control, service and resource acquisition) and Gkliatis (2009) covered only the two board functions, including monitoring and provision of resources and their relationship with firm performance but BoD in different situation has varied functions that can influence firm performance.

This signifies that board of directors need to perform various functions based on several theories recommendations instead of single perspective. This implies that

researchers traditionally have a narrow vision on the board functions. Their consideration on how to increase firm performance and value creation has only been viewed through small lens. Furthermore, contemporary literature on CG suggests that the relationship between board's function and firm performance is being investigated based on an isolated framework through stewardship theory, agency theory and resource dependence theory (Wolf, 2007). In general, these studies seriously lack cohesive approach and the generalization of the findings of the relationship amid board's functions and performance remains deficient (Ong and Lee, 2000). Therefore, the issues put forward in this study entailed:

- Is there any relationship between BoDF and different dimensions of firm performance (OFP, FP and NFP)?

1.5.3 The Relationship between Intellectual Capital Components and Firm Performance by Mediating Board Functions

Wu *et al.* (2012) examined the effect of IC on firm performance. The results of their study certified that firm performance is positive and significantly influenced by IC and CG. Likewise, Hillman and Dalziel (2003) developed an integrated model of board functions which, by providing resources and performing monitoring functions, also links board of directors as mediator of the firm performance. Despite their attempt, which links board of directors and two other functions to performance, researchers treated board only as a general term and did not examine the effects of the components of IC on the access to resources and monitoring functions, which strategically are related to firm performance. Moreover, they used firm performance as common term instead of categorizing the concept of performance. Nicholson and Kiel (2004a) argued that research on CG to date is concentrated on one or a few functions of the board, for instance; monitoring management on behalf of shareholders and providing resources to the firms, and board functions have not been examined in full in one model (Hillman and Dalziel, 2003).

Nicholson and Kiel (2007) on the other hand examined the relationships between BoDF and firm performance using three theories of CG (agency theory, stewardship theory and resource dependence theory). The results of their study

revealed that each theory clarifies a particular case and no single theory gives details on the general pattern of results. They have concluded by endorsing research calls for a more process-orientated approach to both theory and empirical analysis for the purpose of explicating that how boards add value (Nicholson and Kiel, 2007). This implies that action on the advice of a single theory separated from the others cannot be considered by practitioners (Nicholson and Kiel, 2004a). To address this issue, they proposed a model of board effectiveness, which uses structures of board's intellectual capital. They interestingly deployed main theories of CG to examine how firm performance is influenced by the board of directors. They finally asserted that performance of the board of directors can be enhanced by evaluating their IC . Ismail (2005a) a year later pointed out that Nicholson and Kiel (2004a) did not include SpC as a component of IC in their model, which influence the atmosphere of the firm and also a strong predictor of firm performance.

Correspondingly, CEO like board of directors is an important organizational entity as CEO is a carrier of responsibilities delegated upon him/her by the board in making decisions and running the affairs of the firm (Mallin, 2007; Ong and Lee, 2000). Retrospectively, CEO supply information in facilitating decisions in the boardroom; this implies that CEO plays more than a mediating role between board of directors and firm managers and employees. This suggests that strong integration amid CEO and board of directors influence the firm performance through consented decisions (Adams and Ferreira, 2007; Adams *et al.*, 2010). Thus, selection of a CEO has turned into a significant board function in recent years, in addition to four keyboard functions (advice and counsel, strategizing, monitor and control and access to resources) proposed by Nicholson and Kiel (2004a).

Several studies, on the other hand, reported that monitoring and advising functions of the board at times produce conflicts with CEO as he/she does not like to be monitored and advised all the times (Adams and Ferreira, 2007) which necessitate on the part of the firm to enhance the application of components of IC, particularly SpC to create a friendly environment for the board room in communicating with CEO and other members of the organization for a firm to enhance performance (Adams and Ferreira, 2007). This discussion in literature provides the impetus in

examining the BoDF as mediator of the relationship amid the components of IC and firm performance. Thus, the question put forward in this study included:

- Do BoDF as the mediator plays any significant and positive role between IC components (HC, SC, RC and SpC) and OFP?
- Do BoDF play a significant role as the mediator between IC and OFP?
- Do BoDF play a significant role as the mediator between IC and FP?
- Do BoDF play a significant role as the mediator between IC and NFP?

1.6 Purpose of the Study

The purpose of this study is to investigate the mediating effects of BoDF variable in the relationship between components of IC and firm performance in Iranian high IC firms.

1.7 Objectives of the Study

Specifically, this research demarcated on the following objectives:

1. To examine whether the IC influence firm performance (FP, NFP and OFP)
2. To examine whether the components of the IC (HC, SC, RC and SpC) have positive and significant effects on overall firm performance (OFP).
3. To examine the level of the components of IC among Iranian high IC firms.
4. To examine whether the components of IC have positive and significant effects on the BoDF.
5. To determine the most significant components of IC that affect the BoDF.
6. To examine the effect of BoDF on different dimensions of firm performance (FP, NFP and OFP).
7. To examine whether the BoDF as mediators play positive and significant role between IC and its components (HC, RC, SpC and SC) and firm performance (OFP,FP and NFP) among Iranian high IC firms.

1.8 Research Questions

In relation to the concerns that have been raised through the problem statement, issues, main purpose and objectives, this research attempt to answer the following questions:

1. Does IC significantly influence different dimensions of firm performance?
2. Do IC components (HC, RC, SC and SpC) influence OFP?
3. Which of the IC components has the most effect on the OFP?
4. Is there a significant relationship between IC and BoDF in Iranian high IC firms?
5. Which of the IC elements has most effects on BoDF in Iranian high IC firms?
6. Is there any relationship between BoDF and different dimensions of firm performance (OFP, FP and NFP)?
7. Do the BoDF as the mediator play a significant and positive role between IC components (HC, SC, RC and SpC) and OFP?
8. Do BoDF play a significant role as the mediator between IC and different dimensions of firm performance (OFP, FP and NFP)?

1.9 Scope of the Study

During the last couple of decades, the significance of IC has increased (Bontis, 1999b; Edvinsson and Malone, 1997b) multifold together with the role of the board of directors. Though, both these phenomena are in the evolving, which require horizon of the research on IC and BoDF in connection with the firm performance, but both of them need to expand in order to mark the boundaries around the constructs noting the difference in opinions in literature pertaining to the dimensions of the construct. This study describes the variables based on the recommendations of the most cited research in literature. Therefore, BoDF in this study comprises of five functions. Correspondingly, IC comprises of four components and used in this study as predictors, and firm performance in this study was measured in FP, NFP and OFP.

Empirically, this study is intended to examine the relationship among the three category variables, including of IC and its components as independent variables, BoDF as mediator and firm performance (FP, NFP and OFP) as dependent variables. Accordingly, this study was limited to an investigation of "The Mediating Effect of Board of Directors' Functions on the Relationship between IC and Firm Performance" as a topic in Iranian high IC firms. The principal criteria for selecting these kinds of firms is that they are predominantly listed firms or large firm and employ over 40 employees. The study was census and the target population was 314 firms that their main office was established in Tehran. The firms were considered as the unit of analysis of this study. The survey questionnaire with a total of 87 items was employed as the instrument for gathering and measuring quantitative data. Top managers were selected as respondents, representing each firm. For collecting data, the high Iranian IC firms were grouped into eight categories, based on their nature of operations.

1.10 Significance of Study

This study is based on the study by Nicholson & Kiel (2004) that investigated relationships between IC components, board of directors functions and firm performance, particularly, by mediating functions of the board of directors. The differences (conceptual gap) are that in this study:

1. Spiritual Capital (Gillett, 2002; Ismail, 2005) was added as the fourth component of the IC as independent variables (IV).
2. CEO selection was added as a fifth dimension of BoDF as mediator variable (MV)
3. Firm performance was broken into three dimensions as dependent variables (DV).
4. The expected results of this study were disclosed the extent IC components' influence on Iranian high IC firms' performance.
5. Most of the previous studies linked BoDF to only a single theory. This study linked it with a number of theories.

Understanding and analyzing the impact of the components of IC on BoDF and firm performance disclose a pathway to stabilize and promote the permanent competitive advantage for the firms. Legalistic theory suggests that the board of

directors is elected under the firm's charter and common law by shareholders, and contribute to the firm's performance by creating the competitive advantage through putting into effect their legal functions. Nadler and Nadler (2004), and Nicholson and Kiel pointed out static board is a burden for the firm as they focus more on monitoring and controlling expenditure and physical capital of the firm rather than other functions and capital. In contrast, performing firms are cautious about the dynamic nature of their boards, as pointed by Nadler *et al.* (2006) that dynamic board are occupied with components of IC, and carefully utilize the elements of IC in making decisions to direct and manage the corporation effectively.

BoDF encompass the selection of the CEO, strategizing (strategy formulation), monitoring and controlling the affairs of the firm, providing advice and counsel to management and providing access to resources. Based on the horizon strategic choice theory, Ong and Lee (2000) contend that strategies permit the firms to achieve higher levels of performance and effective strategy formulation necessitates intelligence, creative and innovative managers and employees. Similarly, legal theory advocate control as a function of the board of directors is critical for the success of the company, while agency theory advocates monitoring as a counterpart of controlling. This implies that difference of interest among the shareholders (manage an enterprise and maximize profits), and managers (run and operate company) generate conflict and affect the firm performance (Monks and Minow, 2008; Ong and Lee, 2000). This study is significant as it is intended to proffer insight and understanding into the influence of IC in CG (board functions) in connection to firm performance. Therefore, the framework of this study facilitated the contributions of organizational development of the Iranian firms. In addition to that understanding the linkage between board functions and firm performance from an IC perspective permits the development of superior knowledge associated with organizational change and development.

Moreover, copious literature on the relationships between the BoDF and influence of IC on their performance (Adams and Ferreira, 2007; Chiang and He, 2010; Conger *et al.*, 1998; Faleye *et al.*, 2011; Hermalin and Weisbach, 2003; Kaufman and Englander, 2005; Kosnik, 1987; Maharaj, 2007; Nadler and Nadler,

2004; O'Connell and Cramer, 2010; Ogbechie *et al.*, 2009; Ruigrok *et al.*, 2006; Schrage *et al.*, 2009), IC and firm performance (e.g. Bontis and Cabrita, 2008; Bontis *et al.*, 2007; Ling, 2011a; Marr and Spender, 2004; Martin *et al.*, 2011; Rudez and Mihalic, 2007) and BoDF and firm performance (e.g. Adjaoud *et al.*, 2007; Alchian and Demsetz, 1972; Gkliatis, 2009; Kula, 2005; Lawal, 2012; Nicholson and Kiel, 2004a; Nicholson and Kiel, 2007) presents conflicting results. In addition to the conflicting results, literature illustrated that most of these researches were conducted in developed countries of the world and mostly in large organizations. Literature remain scant in the role of IC in board functions in connection to firm performance in developing and conservative economies (Kalyta, 2011; Lester, 2003; Nadler *et al.*, 2006; Nicholson and Kiel, 2004a; Nicholson and Kiel, 2003).

In addition, the results of this study disclosed the extent to which component of IC is/are significant for the Iranian high IC firm. Further, the findings of this study also opened the new pathway for the main decision makers of these firms. Furthermore, so far, there has not been any study on BoDF as mediator between IC and firm performance about Iranian high IC firms.

Therefore, this study contributed to the larger body of knowledge by filling this knowledge gap through examining the relationship between the components of IC and firm performance through the mediating role of board functions. Furthermore, this study is the first time that empirically focused on high IC firms in Iran and contributes significantly to the development of the Iranian economy.

1.11 Definitions of Important Terms;

This section enlists the broad dimensions of the study and offers their basic definitions. Their operational definitions and measures are provided in Chapter 3.

1.11.1 Overall Firm Performance (OFP);

Firm performance is defined as an indicator of comparison between result and yield, or in more particular, an assessment between the actual and expected yields. In the Balanced Scorecard (BSC) measurement system that highlights a more general and integrated set of measurements, firm performance is examined from four perspectives: Financial, Customer, Internal business, and Innovation and learning perspectives (Kaplan and Norton, 1996; Mouritsen *et al.*, 2005; Niven, 2006). Therefore, overall firm performance refers to the combined effectiveness of the firm that covers financial and non-financial performance.

1.11.2 Intellectual Capital:

IC is described as the sum amount of a firm's resources encompassing collective tacit knowledge, human skills, experience and any intellectual resource that can contribute to create value (Bontis, 2002a; Stewart, 1997a; Sullivan, 1998). It is categorised to HC, SC, RC, and SpC that are mentioned in this study as follows

- **Human Capital (HC):** HC refers to the skills, knowledge, expertise, and experiences held by an individual or employees take with them when they leave the firm. So it cannot be HC owned by a firm but only be rented.

- **Structural Capital (SC):** SC is a non-thinking asset, which consists of everything that remains within the firm at the end of the working day as documents such as work process, procedure, information systems, databases and etc.

- **Relational Capital (RC):** RC refers the ability and knowledge embedded in all the relationships an firm with internal and external stakeholders to interact positively with business community members to motivate the potential for value creation by enhancing HC and SC.

- **Spiritual Capital (SpC):** SpC is reflected in what a community, a firm believes in, what a community, or a firm exists for, what it aspires to, what it takes responsibility for, so that it is positively linked to various dimensions of performance. It determines the quality of the air people breathe and the water people drink, and even where people live.

1.11.3 Board of Directors Functions

BoDF are the roles vested on the members of the board, which concerns the managing and directing of the firm activities in the best interests of the shareholders (Carver and Oliver, 2002; Rezaee, 2002). It is mentioned as the main functions of the board that comprise; Supervising or Monitoring, Strategy formulation, Accesses to resources, Providing Advice to management and CEO selection.

- **Monitoring and controlling (MC):** MC refers to the extent to which the board of directors fully understands and assumes its responsibilities to exert control and supervise top management activities and provide necessary support in order to maximize the shareholders' interest.

- **Strategy Formulation (SF):** SF refers to the board of directors' capabilities to develop a long term business strategy in the dynamic business environment, know and understand the firm's mission, vision and strategy, the firm competitors, long term decisions and also their ability to incorporate and adjust the various stakeholders' needs in firm strategy.

- **Providing Accesses to Resources (PR):** PR refers to the extent to which the board of directors uses its networks to bring a diverse portfolio of resources in a firm, level of link with important and strategic stakeholders, the degree to which the board of directors balance different stakeholders' interests.

- **Providing Advice to Management (PM):** PM indicates the ability of the board of directors to provide valuable advice to top managers of the firm and CEO. It includes their ability to formulate a common goal and to share

it with senior management and shareholders to avoid any potential conflict among the parties, the level of communication between the board and management and the amount of spending time with the materials and the CEO to understand the long-range planning issues.

- **CEO Selection:** Based on the charter and rules of firm, CEO is selected as agent of the board of directors for running the different firm offers. The extent to which board of directors considers to CEO selection is an integral part of their duties that will influence their performance.

1.12 Organization of the Chapters

Chapter 1 discusses the study introduction, background of the study, and problem statement together with the objectives of the study, research questions, scope and significance of the study. Chapter 2 reviews the literature on firm performance, IC, CG and BoDF whereby some preceding studies on the concept, the relationship between them, theoretical and conceptual frameworks with hypothesis's development are also detailed in this chapter. A review of the empirical studies related to the dependent, mediator, and independent variables are included. Chapter 3 explicates the research philosophies, research framework, research hypotheses and the methodology, which were employed in the testing of the study hypotheses.

Chapter 4 presents the data analysis, which contains the description of the results. In this chapter, the discussions on the findings, which have gathered from the different types of testing, were presented. The research questions were answered in the final chapter as Chapter 5. It also provides the discussions on the findings, conclusion and recommendations. The author also presented some suggestions for further research.

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