Exploring the Relationship of Intellectual Capital, Board Characteristics and Business Performance: A Literature Review

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Abstract
The concept of intellectual capital (IC) was introduced by Leif Edvinsson in 1997 in the long Planning journal. 2019 marks since 22 years from that article. This centenary has motivated us to review the literature on the IC for highlighting the various research questions that relates to current marketing research. Hence, after reviewing the literature on IC, it has shown that IC is considered a knowledge based and an important resource to improve the organizational business performance (BP). In the extensive literature, the researchers have argued that as a knowledge base resource it carries out more than 75 percent worth of the organization and also determine the success of the today’s business. The relationship between IC, board characteristics (BC) and BP has been review in detail. In line with this, intellectual capital and board characteristics are considered essential to improve performance and success of the organization but there still there is no clear relationship among them and also a lack of studies in the context of developing countries. Hence, after reviewing the several studies, the following knowledge gaps in the existing studies have been found. Therefore, much remains to understood regarding the way of approaching and conceptualizing both, IC, BC with the BP in another way to see the clear relationship among them.

Keywords: Intellectual Capital, Board Characteristics, Business Performance

I. Introduction
In the contemporary environment, firms for increasing the value creation are moving towards the intangibles assets. From the last decades, the usage of intangible assets was mainly for the service sector to measure and manage but there was little attention on the manufacturing industry, as they have mainly focused on the fixed and financial assets. But currently, the intangible assets or intellectual capital (IC) is
become equal important for the both sector either service or manufacturing. Since that
time, the focus of academic research has mainly focus on IC to enhance the business
performance (BP) of the companies especially with the failures of the significant
firms developed countries and at the time of 1990s financial crisis of banking industry
in the developing country such as Asia. Similarly, it is found in the study of Sardo and
Serrasqueiro (2017) that currently, IC has a positive and significant impact on the BP of
non-financial industries but with the exception of SC for the first group of country has a
negative impact on the BP. Based on findings recommended that financial crisis
negatively affect the financial performance of both groups as that time they did not have
the major focus on IC.

Similarly, along with the importance of IC, it is found by Demirbas and
Yukhanaev (2011) that the effective usage of board in the Russian firms is playing an
important role to enhance the performance. In contrast, the decline in the performance
of Uganda firms are not considered uncommon (Among, 2009; Brownbridge, 1998;
Demirbas & Yukhanaev, 2011; Tentena, 2010). The main reason which was counted
that the Ugandan firms did not have the well skilled, trained, educated and creative
managers or employees in the banking sector and strong panel of board director which
governed and manage the structure of the organization. This is reason that it was done
as well also the internal controls system such as internal audit.

Further, it is argued by Okpara (2011) that for the firms a board governance
could only be considered a significant if it will be provide help to the organization to
enhance the performance of the organizations in the developing countries and IC of
the organization (Abeysekera, 2010). In line with. It is found in the extent literature
that IC is considered a fundamental and critical resource of the organization for the
success of the organization (Jen Huang & Ju Liu, 2005), as could increase the
performance of the organization more effectively along with the good characteristics
of the board. In line with this, there are two expectations are created to establish this
inference.

At first, in the current modern economy which consists of dynamic and
competitive environment encourage the companies could move towards the IC to
enhance the performance of the organization (Ghosh & Mondal, 2009) as compare to
traditional monitoring operations (Woan Ting, Ramasamy, & Chew Ging, 2010)
through the good structure or the board. In this sense, it is suggested that performance
of the organization could be achieved through the effective management IC through
the good board characteristics and hence, IC in the current environment for the
manufacturing firms to enhance the BP is become an essential factor. Therefore, this
approach of enhancement of performance could only be achieved through the proper
management of IC is argued by (Dumay & Garanina, 2013) through the effective
board characteristics. In this sense, it is investigated by Brennan and Kirwan (2015),
and found that based on the agency theory for the board characteristics (BC).
Therefore, it is considered the BC and IC are considered equal important to enhance
the BP of organization.

At second, both BC and IC as per the viewpoint of the resource dependency
theory (RDT) for the board characteristics and resource based view (RBV) for the IC
are considered important to enhance the performance of the organization. With
respective to RDT has a major focus on the (Hillman & Dalziel, 2003). In this
regards, according to this theory, it is suggested that board is considered an essential
resource for the firms to enhance the performance of firms and also to secure the
critical (IC) resources of the organization (Arnegger, Hofmann, Pull, & Vetter, 2014;
Dumay & Garanina, 2013) in the following two ways. At first, through the effective
knowledge and experience of the directors which entirely provides helps to
organization to enhance the performance of the organization. At second, through
increasing the relations with the outsiders that will provide a good help to access the
resources which are external, such as including, buyers, customers, suppliers, public,
and social group.

In the same vein, it is suggested by RBV, that IC which consist of knowledge
based resources which are called essential resources of the business that are ultimately
provide help to enhance and improve the performance of the business. (Marr &
Schiuma, 2001; Schiuma & Carlucci, 2007). As, board characteristics are considered
or seen the useful resource of the firms (Afrifa & Tauringana, 2015) and in this regard
IC of the firms is also called an important resource of the firms. It is found in the previous literature that the relationship between IC, BC and BP is not clear. Thus based on their relationship, the combination BC and IC could better explain the variance in BP. Hence, it is called true as it has been contended by Safieddine, Jamali, and Noureddine (2009) that firms potential could only be maintained through depending on their capacity and proper usage of all the resources at their disposal.

II. Literature Review

In the current study, the multiplicative effort of board characteristics (BC) and intellectual capital (IC) is based on the two theories which are resource dependency theory (RDT) (Pfeffer, 1972) and resource based view (RBV) (Barney, 1991; Wernerfelt, 1984). In line with these theories, it is suggested by that in the BP variances is mainly the results of heterogeneity in the critical (IC) resources across the firms (Wernerfelt, 1984). Therefore, IC is considered a strategic asset as of directly link with the BP (Riahi, 2003). Consequently, an important function of board is considered a provision of important critical resources (Hillman, Cannella, & Paetzold, 2000) and a perspective dominant in the RDT (Pfeffer, 1972). In this sense, it is referred that board has an important ability to bring the resources that are equally important for the business or firms (Wernerfelt, 1984). Moreover, it is supported the view from the RDT that with respective to achieving critical resources through the boards entirely provides help to improve the BP (Hillman and Dalziel, 2003). Therefore, it is elaborated that RDT with the associations of RBV for the firms (Barney, 1991) could be considered a productive due to the corresponding focus on the resources.

Moreover, recommended that how the competitive advantage is achieved through gaining or obtaining the valuable, rare, imitable and non-substitutable (VRIN) (Hillman, Withers, & Collins, 2009) resources through the external environment allowing the firms could be focused both an internally perspective which specify that how organization specify their resources and also could be offered into how could be controlled critical resources. In line with this, with respective the RDP it could be offered that how the critical resources are controlled and gained better and
how provide help to develop the interdependencies around the critical resources effect the performance of the firms that is derived from them. Moreover, in the perspective of RDT, Pfeffer (1972) further asserted that board independence also enable firms to minimize dependence and provide resources. Similarly, Hillman, Withers, & Collins (2009) explained that earlier studies using the RDT to examine the board focus on BS and composition as a indicators of board ability to provide critical resources to firm. Therefore, the board bridges the gap between the firms and the vital resources that are essential for company, and mitigate the individual directors’ deficiencies in business skills through the collective decision making which in turn improve the quality of firm’s strategic decisions and actions (Abeysekera, 2010).

In summarizing viewpoint of the RDT, board is resource that not only overtakes its need for the other resources but also put the environment in its favor which provides help in enhancement of the BP (Oludele, Magret, & Tobiah, 2016). The theory further communicates that directors enhance the resource-based of the company (Oludele et al., 2016). Since IC components and board characteristics are resources that adhere to the Barney (1991) conditions. This study therefore empirically reviews the literature with respective to BC and IC are necessary to improve the BP. While, preparation of the governance is to design which provides help is to enforce the compliance (Knapp et al., 2011) and also provide help to acquire the ability of the organizations to used different capital for value creation and to attain their visions predominantly the goals which are related to financial (Keenan & Aggestam, 2001). In line with all of these arguments, the mutual influence of BC and IC could deliver the better BP. These results are reliable with the commendation made by (Abdullah & Valentine, 2009).

A. Board Characteristics and Business Performance

The concept of board characteristics (BC) has been derived from the mechanism of the corporate governance (CG). In the profile of CG, board of directors provide help and mention the directions in the organization (Beaver et al., 2007). In this regards, among all these factor in board is include to control the organization resources to enhance the BP and also making the effective communication in the organization (Nkundabanyanga, Tauringana, & Muhwezi, 2015). All of the process
factors that are elaborate in the study of (Cornforth, 2001) explained the variances in effective BC. In line with this, it is recommended that effective BC provide help to enhance the performance significantly. For instance, it found by Cornforth (2001) that through the betterment and enhance the meeting of organizations in considered crucial for increasing the BP. In the same vein, it is found that effective BC has a significant association with firms in the developing countries as it could provide assistance to enhance the BP (Okpara, 2011).

Moreover, it is elaborated by Nkundabanyanga et al. (2015) that the BC has been achieved a more consideration in the literature. Furthermore, a research elaborated by Green and Griesinger (1996) on the not profit disability development, they developed a logically programing and a model that suggested that the correlation between BC and BP is more effected. In contrast, Okpara (2011) further conducted the on nonprofit making organization in USA, they confirmed from the literature that there are some expectation of the association between the BC and BP. In addition, Coles, Daniel, and Naveen (2008) found positive association between board size and firm value. In contrast, Beiner, Drobetz, Schmid, and Zimmermann (2006) found the negative association between BS and BP.

**B. Intellectual Capital and Business Performance**

Based on the previous literature, RBV suggested that IC has the ability to enhance the BP. In both developed and developing economies numerous studies have been examined the relationship between intellectual capital (IC) components and business performance (BP). The concepts of IC were derived that it defines the expression that has a link with the intangible assets which are possessed by the organization. Sometimes, these assets are based on competencies of the employees, the internal and external structure of the organizations (Sveiby, 1997).

Similarly, as the diversity in term and definition, there are various categories of IC components have been found in the existing literature. For example, Edvinsson (1997) classified IC into two components: human capital (HC) and structural capital (SC). He was further explained that SC can be divided into customer capital (CC) and organizational capital. On a similar note, Roos and Roos (1997) divided into three
groups: HC, organizational, and CC and relational capital (RC). On the other hand, Ordóñez de Pablos (2003) further terms that “customer capital” as a “relational capital”. In addition to Ordóñez de Pablos (2003), the Riahi (2003) further classified that it is a mix of HC, structural capital (SC) and CC. Despite in the explosion of IC taxonomies, based on the theoretical and empirical perspective, it is argued that, IC is considered a value driven which provide help in leading to improve the profitability of the firms (Bismuth & Tojo, 2008). Further added by Chien and Chao (2011) that IC has three dimensions, HC, organizational capital and information capital. Moreover, Khalique, Shaari, Abdul, and Isa (2011) further proposed the six dimensions of IC, HC, SC, CC, social capital, technological capital and spiritual capital (SpC).

From the empirical perspective, in the last decade, a single embedded case of Shiu (2006) examined the impact of IC on the financial performance of 80 Taiwan listed technologies companies for the period of 2003. The findings have shown that HC has the positive but SC has negative association with the profitability. Moreover, HC has a significant and negative association with the productivity and market value and SC has a negative and insignificant relationship with the productivity and positive and insignificant association with the market value. The study found the mixed results with the similar findings of Firer and Williams (2003), whose study was on the sample of 75 publically traded firms of South Africa. Collectively, both studies Shiu (2006) and Firer and Williams (2003) were focused on a heterogeneous population that failed to examine the single industry variation. In contrast, Wu and Hu (2012) extended the limitation of inter-industry variation and established a study on single industry on the healthcare hospitals and contended that a new component information capital along with other two components HC and organization capital is the basic element for the financial performance. Furthermore, there are several have been shown that IC has a positive and significant association with the BP. In line with this argument, it is found an significant association between the IC components and BP in the study of (Chen, 2004). On the same vein a same findings has been found in the study of Kamukama, Ahiauzu, and Ntayi (2010) in Ugandan microfinance firms.
Furthermore, several studies used the VAIC model for the IC components. For instance, Ozkan, Cakan, and Kayacan (2017) investigated on 44 Turkish banks to check relationship between IC and business performance and further analyzed the data through regression analysis. The key findings have shown that in terms of bank types, like, investment and development banks, SC has an insignificant effect on the performance of banks while HC has the positive and significant association with the BP. In the same vein, results of Ozkan et al. (2017) are consistent with the study of Joshi, Cahill, Sidhu, and Kansal (2013) based on multiple regression analysis. They found that BP of 40 financial sector as compared to other insurance companies in Australia is more affected by the HC. In contrast, positive and significant connotation of IC components with the firm performance have shown in the study of Nadeem et al. (2017). They investigated the dynamic relationship of IC and firm performance and collected data from the listed firms audited reports.

In contrast to previous limitations on three general IC components, recently a broadly perspective research has been adopted by Khalique, Bontis, Shaari, and Isa (2015) and found that higher profile of IC components such as, SC, CC, technological capital, social capital and SpC have a positive and significant relationship with BP in SMEs of Pakistan. Whereas, HC shown positive and insignificant association. In contrast, Kharal, Abrar, Zia-ur-Rehman, Khan, and Kharal (2014) further explored a study on 56 Oil and Gas firms of Pakistan for the period of 2005 to 2013. The results represent the positive association between IC and BP Rehman, Chaudhary, Rehman, and Zahid (2011) further investigated the impact of IC on the BP of 12 Mudaraba companies in Pakistan. For measure IC used VAIC approach. The results have shown that HC and SC have a significant association with the BP.

To sum up, a careful empirical analysis has shown that extant literature discloses some remarkable facts. Consequently, previous studies also have inconsistent findings which are shown below in Table 2.2. Thus, overall these studies highlighted the need to maintain the consistency in results study should address other components of IC namely, social capital, SpC and information capital along with
three general components. As these components have still little attention in the extant literature.

Table 1: Summary of the Research Studies of the Relationship Between IC Components and Business Performance in Developed, Developing Economies.

| Author               | Sample                                      | Independent Variable | Dependent Variable          | Findings                                                                 |
|----------------------|---------------------------------------------|----------------------|----------------------------|--------------------------------------------------------------------------|
| Shiu (2006)          | 80 Taiwan listed technology companies       | HC, SC               | Productivity, Profitability, Market value | HC has a significant and positive relationship with profitability and negative with productivity and market value. SC has a negative and significant association with profitability and negative and insignificant with productivity, positive and insignificant with market value. |
| Chien and Chao (2011)| 1250 questionnaire to Taiwan financial institution | HC, Organizational capital, Information capital | Sales performance | Three components have a positive effect on sales performance. |
| Khalique and Mansor (2016) | Malaysia tourism industry                   | HC, SC, RC, SpC     | BP                         | HC, SC and RC, social capital have the significant relationship whereas, SpC has insignificant relationship with BP. |
| Ariff, Islam, and Van (2016) | 1328 listed multinational companies in the US | HC, SC, CE           | Tobin’s q, Market to book value | HC has insignificant association while SC has the positive and significant association with the performance indicators. |
| Nguyen (2017)        | 100 Publicly listed pharmaceuticals, Biotechnology, and life sciences firms | HC, SC, CE           | Profitability, Productivity, Market value | HC has a positive and significant association with the profitability and productivity and insignificant and negative with market value. Whereas, SC has an insignificant and negative association with all indicators. |
C. Intellectual Capital, Board characteristics and Business Performance

Previous empirical researches clearly indicated that relation between IC components and BP has not been concluded at one point. This specifies that there are some other relations which could affect the IC and BP association. As it is explained by Veltri and Mazzotta (2016) that IC exists in the firm, and corporate governance (CG) is accountable for IC. Therefore, in the CG profile, the board of directors are an important tool to develop and manage the IC of the firm through structuring and formation of relevant strategies (Musalli & Ismail, 2012; Williams, 2001). Accordingly, IC requires management attention to a set of organizational attributes including organizational governance to enhance the BP. Therefore, investigate board characteristics such as board independence, board composition and board size to bring new approaches for researchers and regulators on the importance of board director’s characteristics for the IC and BP. More specifically, it is an important tool to grow generate, leverage, and properly manage of IC in firms through formation and organizing of relevant strategies and policies.

As, board characteristics sets the rules for the relationship between employees, management and activities and sharing value, presenting guidelines for proper resource
allocation and management (Safieddine et al., 2009). Resources within the control of the firm include organizational process, assets, capabilities, information, knowledge and firm attributes (Ting et al. 2010) and could yield sustainable competitive advantage when valuable, rare, inimitable and non-substitutable (Barney, 1991). These resources assets known as IC. Ruzevicius (2006) further explained in the European Foundation for the Quality Management (EFQM) model of excellence that leadership has a linked with IC components. The board governance plays an important to enhances the resource (IC) in influencing the firm BP. This is because other than only acquiring human capital, firms board characteristics adopts and incorporate structures and process to depends preserve (Keenan and Aggestam, 2001; Bontis, 1996). As IC “allows an organization to transfer a collection of financial, material, and human resources into a system that are capable of creating value for the stakeholders” (European Commission, 2006, p. 4). Thus, it is meaning that IC is found in all organizations. It is following that since “a board is a team of workers which have sufficient knowledge, and to do their job, the board needs the same resources and capabilities that any other successful team of knowledge worker’s needs” (Conger et al., 1998, p. 140), IC and board characteristics has to interlock for better BP of the organizations.

However, there are number of assumptions suggest that IC and board characteristics indeed need to interlock is a multiplicative fashion to improve BP. At first, board characteristics is easily visible in meetings and meetings frequency that is important for BP improvement (Vafeas, 1999). For example, administrative systems such as a vibrant information system that would produce say accounts for the directors to deliberate on or databases and other management information systems necessary for producing decision-useful information for the directors in the meetings should exist. Second, board of directors are likely to provide advice to top management, but also managers endowed with a high level of human capital can be consulted in formulation of firm policies (Zappalà and Cronin, 2003). If this collaborative relationship is well entrenched in firms, it could be expected that better financial results ensue in service firms given that better customers’ satisfaction (high quality service) derives from high-level IC (Zappalà and Cronin, 2003).

In addition, third, research into IC has evolved into the third stage which, according to Guthrie et al. (2012) is characterized by research critically examining IC in practice and devoted to the managerial implications of how to use intellectual in managing a company. Therefore, as the position of this paper suggests, practical board characteristics should view IC as complimentary to itself (board governance) in the pursuit of better BP. As Guthrie et al.
(2012) outline another essential aspect of the third stage as empirically researching IC practices inside organizations; this paper argues that this practice should be the combinatory role performance of board characteristics for IC. Lastly, resource dependence theory suggests that larger boards with high levels of links to the external environment improve the company’s access to various resources, which in turn positively influence corporate performance (Sheikh et al., 2013). Van den Berghe and Levrau (2004) further argued that increasing the number of directors provides an increased pool of expertise because large boards are likely to have more knowledge and skills than small boards. However, Jensen (1993) further stated that when boards get larger, they are less likely to function effectively.

Accordingly, board is associated with the size of firm (Cheng, Groysberg, Healy, & Vijayaraghavan, 2017). Therefore, it is argued by Gill, Flaschner, Mann, and Dana (2014) that small firms have the small BS. Whereas, Yermack (1996) and Coles et al. (2008) further described that larger and diversified firms have a greater number of directors in the board as the large firms are the under pressure of the large shareholders. In line with this, BS is associated with the size of firms. An evidence is concluded by Chaganti, Mahajan, and Sharma (1985) that as compare to bankrupt’s firms, the non-bankrupt’s firms have the larger board which provides more help to firms in long-term survival. Thus, it is supporting the evidence that when the BS is increasing it enables the firms to enhance the BP through the establishment of strategic resources (IC) in the organization.

In addition, board independence comprises of executives and non-executives who are either independent or non-independent directors. The non-executive directors (NEDs) play a role in monitoring the actions of the CEO and executive directors to ensure that the shareholders’ interests are well cared for and to add to the diversity of skills and expertise of the directors (Nahar Abdullah, 2004; Weir & Laing, 2001). In line with this, it is explained by Duchin, Matsusaka, and Ozbas (2010) that independent directors are considered as true monitors who could discipline the management and improved BP. The board is considered more independent, if it has more non-executive directors (Shavulimo, 2014). Having majority of independent directors (outsiders) on the board will counterbalance the power of the CEO in decision-making and provide assurance to shareholders (Shavulimo, 2014). As for the relation between board independence and BP, if outside directors are independent and have professional ability, they could be more objective to make decisions and monitor managers (Shavulimo, 2014) that provide help to increase the IC of the firms.
Moreover, empirically association between board characteristics, IC and BP is still ambiguous. For instance, Coles et al. (2008) found the positive relationship between the BS and firm value. In contrast, Beiner et al. (2006) found the negative association between BS and BP. Moreover, Mohapatra (2017) further found that larger BS has the positive association with firm performance. This empirical finding also supports the view that when the BS is large it is more effective. Besides, Parviz and Nateghian (2015) examined the relation between board structure and IC in the case study of 92 listed companies in Tehran Security Exchange (TSE) and found an insignificant and negative relation between BS and IC. Similarly, Sarpal and Singh (2013) also concluded that both BS and BP were independent of each other, BS was not found to be associated with BP.

In addition, along with the BS, board independence also shown in the research of (Leung, Richardson, & Jaggi, 2014), based on a sample of Hong Kong firms, finds no significant association of the independence of corporate boards with BP in family firms, whereas board independence is positively associated with BP in non-family firms. Similarly, Kouki and Guizani (2015) in their research based on Tunisian firms, found that family ownership negatively moderates the outside directors BP relationship, and Reyna, Vázquez, and Valdés (2012) in their research on the high ownership concentrated context of Mexico find outside directors have a positive association with BP and ownership concentration has an important effect on the board of directors composition.

Furthermore, Pudjiastuti and Mardiyah (2007) investigated the effect director’s structure on corporate performance using the 150 companies listed on the Indonesia Stock Exchange with a study period of 2001 to 2005. The results revealed that the size of the board directors and the number of women directors have a negative and significant effect on BP but the number of independent directors has a positive and significant effect on BP. In addition, some studies found better performances for firms with boards of directors dominated by outsiders (Cornett, Marcus, & Tehranian, 2008; Ravina & Sapienza, 2009).

In contrast, while Weir and Laing (2001) and Pinteris (2002) found no such relationship in terms of firm value. Also, Forbes and Milliken (1999) found no relationship between the proportions of outside directors and various performance measures. Additionally, Shukeri et al. (2012) conducted the study on board characteristics as board size, board independence has an impact on BP. 300 Malaysian public listed companies were randomly selected from each sector. The results showed that board size have positive relationship with BP while board independence has negative relationship.
Summarizing above discussion, studies shown the indication that board characteristics have an association with IC and BP but relationship has not been discovered in depth in a coherent manner in several variables. Thus, previous empirical findings highlight the need that there is a need of to test the relationship in another context.

III. Conclusion

This paper has been presented to review the studies both of theoretical and empirical perspective which has been conducted on the intellectual capital, board characteristics and business performance. In depth review of literature, it has shown that both IC, and board characteristics has been playing a fundamental role for improving the business performance and IC is considered a basic fundamental element that is consist of resources for any kind of the organizations. Hence, after reviewing the literature on both perspective, it has been proved that IC and board characteristics have a positive and significant impact to improve the business performance. In addition, it is also proved that board characteristics are essential for the management of IC to improve the business performance but most of literature has been presented in previous studies is in the context of large organizations and is in the western context. Hence, this review has also shown that there is lack of studies in the context of IC and board characteristics with respective to developing countries and more.

Similarly, it is also found in the empirical review of literature that IC, board characteristics and BP is also on the conflicting aspects have inconsistent findings which is shown in the literature. Therefore, as per the researcher best findings an empirical study should be encouraged in developing countries as (Pakistan, Malaysia) etc. from the IC, board characteristics and BP perspective. Additionally, in the future study should also be include the several implications for the policy makers, and the greater practitioners so as to include the original view point of the people which have linked with the business. As means for recognizing the IC as a key element for enhancing the wealth of business, it is essential for the firms to set a mechanism which provide help to management to enable the business in growing and functions effectively and efficiently.

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