



## The Moderation Effect of Corporate Governance between the Intellectual Capital and the GCC Banking Industry's Performance

Yahya Ahmed Saif Alsarhani<sup>1</sup>; [Nur Hidayah Binti Laili](#)<sup>2</sup>; [Ainulashikin Marzuki](#)<sup>3</sup>



<sup>1</sup>Oman College of Management & Technology, Muscat, Oman E-mail: ([yahya.alsarhani@omancollege.edu.com](mailto:yahya.alsarhani@omancollege.edu.com))

<sup>2</sup>Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Nilai, Malaysia E-mail: ([hidayah@usim.edu.my](mailto:hidayah@usim.edu.my))

<sup>3</sup>Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Nilai, Malaysia E-mail: ([ainulashikin@usim.edu.my](mailto:ainulashikin@usim.edu.my))



### Information of Article

Article history:  
Received: 7 Jun 2023  
Revised: 8 Jun 2023  
Accepted: 20 Jun 2023  
Available online: 30 Jun 2023

#### Keywords:

Intellectual capital  
Human capital  
Structural capital  
Rational capital  
Social capital  
Corporate governance  
Banking industry performance  
GCC

### ABSTRACT

**Purpose:** The aim of this study is to identify the moderation effect of corporate governance between the intellectual capital and the GCC banking industry's Performance.

**Design/ Method/ Approach:** The retrieved data spans from 2013 to 2019, based on a quarterly basis. As a result, the estimated total number of observations for each bank is 28, and the 58 listed banks have 1624 annual observations over the period 2013-2019. This equals four observations annually for six GCC countries over the seven years from 2013 to 2019, for a total of 168 observations in the panel data.

**Findings:** The results indicated that all of the moderation effects of (board independence, board size, CEO duality, and ownership structure) and intellectual capital index indicate a non-significant impact on return on equity. The results indicate that all of the moderation effects of (board independence, board size, CEO duality, and ownership structure) and intellectual capital index indicate a non-significant impact on earnings per share.

**Recommendation:** This study recommends that banks need to adopt the quality of governance practices represented in the independence of the members of the board of directors, the non-duplication of the role of the first executive director, the independence of the members of the audit committee, and the availability of financial and accounting expertise in its members; This has positive effects on improving the bank's performance and maximizing its value.

### 1. Introduction

The Gulf countries can be defined as a political subregion with high potential within the set of Arab countries. This subregion stands out for its political stability, economic-commercial indicators, and endless opportunities to attract foreign investment, mainly through Sovereign Investment Funds. Therefore, this group of countries offers outstanding potential for achieving the interests and objectives of the foreign actors of all multinational companies. The Gulf Cooperation Council (GCC) comprises six states, Saudi Arabia, Oman, the United Arab Emirates, Qatar, Kuwait, and Bahrain, with familiar political and economic objectives. The GCC was created in 1988 (Al-Malkawi, Pillai, & Bhatti, 2014) with the shared ambitions of global economic dominance. The GCC states have benefited from some supremacy on the world stage because of their expanding political power, considerable revenue from the oil and gas sectors, and financial edges. The use of hydrocarbon revenues in international financial markets may be observed in this impact. Consequently, the GCC nations have some advantages in the financial sector, especially as the Islamic banking and financing business grew following the global financial crisis of 2008. However, the GCC banking industry's performance stalled due to the considerable decrease in oil and gas prices towards the end of 2014. The banking industry of the GCC suffered a major slowdown from 2014-2019, which is linked to the downturn in the economic situation of the countries of the GCC (Saleh, Moradi-Motlagh, and Zeitun, 2020). These changes caused the GCC governments to start various programs to diversify the region's economic sources, which was later translated into long-term ambitions. The governments of the GCC worked hard to reduce their dependency on oil and gas revenue while improving the banking industry structure. These ideals are founded on two major pillars: transforming knowledge into economic knowledge and enhancing corporate governance standards. In line with the adoption of economic growth knowledge, the UAE Vision 2021 highlighted the importance of improving human capital (Petratos et al., 2020), while Vision 2030 of Saudi Arabia (Khan & Khan, 2020), Qatar (Nawaz & Koç, 2020), Bahrain (Al-Azzawi & Hasan, 2019), and Kuwait (Coombe et al., 2019) focused on boosting the knowledge base of the labour-power. Also, Oman Vision 2040 (Coombe et al., 2019) paid more concern toward improving education ability. Khan et al. (2020) stated that GCC visions focused on growing individual knowledge, which is seen as the most important component in increasing the economy.

In this perspective, knowledge cannot be controlled as such but rather through processes and systems developed in a place that permits such knowledge to be created. Leadership and trust are required, along with other aspects that allow the production of training, remuneration, encouragement, and of course, the system quality of IT systems, as represented by intellectual equity (see for example, Mohammed Abdulullah Yousuf Saeed et al., 2017; Mohd Abdulullah Yousuf Saeed

et al., 2018). This intangible asset provides the business with extraordinary value. This topic is currently relevant in business literature, as well as in organisations related to management consulting, information and communication technologies, (Blum, 2020; Bharadwaj & Shipley, 2020; Cortez & Johnston, 2020; Araya, Dahalan, & Muhammad, 2021a), finance, (Araya, Dahalan, & Muhammad, 2021b; Araya, Dahalan, & Muhammad, 2022; Araya & Miras, 2015), and human resources (Waddill, 2018; Buhalis et al., 2019), which are concerned with the creation of new knowledge and the development of skills that add value to organisations. Previous literature such as (Al-Sartawi & Journal, 2018; Mohapatra et al., 2019; Vo, 2018) debate that driving economic and financial development effectively relies on two main pillars, human and structural, which represent the main components of intellectual capital, as stated by Edvinsson (1997). The subject of intellectual capital has gradually developed in the last few years, particularly when innovation and knowledge-intensive services are at the core of this interest.

According to Mention and Bontis (2013), many, some of them identified, others understood and formally acknowledged by almost anyone, have viewed intellectual capital as one of the most critical challenges for today and in future managers and academics. For many years, the idea of intellectual capital has been employed in academic writing. However, in the 1990s, certain companies in Sweden and the US started to have a theoretical current called knowledge management, which arises from the intention of organisations to increase their human resources' intellectual capital by evaluating their skills to solve their problems effectively. In line to improve the corporate governance system of the GCC as targeted by the visions for the GCC countries, the concept of corporate governance has shifted from a theoretical framework to a practical one. The GCC countries' interest in corporate governance issues has been demonstrated through the organisation of several activities in this field, the establishment of the concerned bodies that supervise the implementation of the rules of governance in most GCC countries, and the promulgation of regulations and rules governing the operation of Gulf companies, in financial markets (Iqbal et al., 2019). Al-ahdal et al. (2020) criticise the GCC for not being serious about reforming its corporate governance system, and this is attributed to the several obstacles facing the reform plan, where GCC capital markets with poor governance spheres and the deficiency of equity culture amid investors, besides governance of comprehensive family-owned enterprises that have conventionally depended on inner sources of finance.

The GCC, as a regional organisation group, has a unique characteristic compared to other economic groups, such as the European Union (EU), the Group of Twenty (G20), and the ASEAN Economic Community (AEC), which is sharing the same family regime among the GCC. In this regard, several empirical studies have investigated the impact of government ownership on firm performance in many countries or economic groups. For the unique case of the GCC, limited investigations accommodate the entire GCC financial market. Arouri et al. (2014) found a non-significant impact of government ownership on the UAE banking industry performance, while Zeitun (2014) find a significantly positive effect of government ownership on the firm performance in GCC. In contrast, Abdallah et al. (2016) found a negative impact of government ownership on the GCC firm's performance. In recent years, knowledge management has become essential since one of its essential elements is intellectual capital since it promotes the creation and generation of competitive advantage between organisations, which constitutes a differential element. Based on these considerations, the business study exposes this new trend for the present and future because human resources and how they create new knowledge impact the productivity and profitability of organisations. Such is the case in the GCC, where intellectual capital is valued, transformed, and transmitted to improve resource management; however, it is challenging to value and measure intellectual capital in GCC countries because tangible assets outnumber intangible assets (Buallay, Hamdan et al., 2020). In GCC, the human being is the centre of development, not the market.

Therefore, it represents a competitive advantage. So that the members of the organisations promote investment in their human talent to reach the maximum of their abilities and skills to generate profitable and lasting competitiveness (Akkas & Asutay, 2022b). To that end, "development is not so much about finding the optimal combinations of resources and factors of production as it is about provoking and incorporating for development resources and capacities that are hidden, scattered, or misused" (Akkas & Asutay, 2022a). A severe problem that slows down the performance of GCC companies is the low investment in intangible assets since the measurement and valuation of these resources are not as advanced as in other countries. Without a doubt, the management of intellectual capital in this scenario is transcendental to attract investors and allocate resources to increase the entity's potential, create value, and obtain financial efficiency for permanence and stability in the current market (Buallay et al., 2021). For this reason, it is necessary to highlight the importance of large banks belonging to the economic activities of manufacturing and commerce in the present investigation because due to the level of income they have, the jobs they create, the taxes that they contribute to the country, among other items, they have a great weight in the economy of the country.

Globally, the significant decrease in oil prices has compelled the GCC's oil and gas sector to adopt the new strategic business to sustain economic purposes. Additionally, Khokhar et al. (2020) ascribed the banking industry's poor performance to a lack of standardisation in products and schemes and a lack of prudent decision-making, governance, and operations. The banking sector regards the GCC as the primary stock market nerve centre. Between 2014 and 2019, the industry generated low returns due to a slowing GCC economy that is more dependent on the petrol and gas industries, a sharp decline in global oil and gas prices that resulted in moderate budget deficits in the GCC (Nusair et al. 2018), and new cash flow in the GCC stock markets as a result of this economic shock event. For example, until 2018, the GCC's central banks and capital market regulators took the lead in requiring corporations to adhere to more stringent corporate

governance norms. The intellectual capital model produced by Edvinsson (1997) constructs an organisation's intellectual capital into human and structural capital. This study has considered social and relational capital's significant and parallel roles. Hence, this study included social and relational capital in the intellectual capital model. Edvinsson's (1997) model classified social and relational capital as dimensions of structural capital. In contrast, the distinct roles of social and relational capital at the first order of the intellectual capital model are neglected. As social and relational capital, they deal with different environments. Social capital concerns the internal relationships amongst the organisation's members, while relational capital concerns the external stakeholders such as clients, vendors, government bodies, and society.

Social capital plays a significant role in the performance of the GCC (Gulf Cooperation Council) banking industry. In the GCC, social capital is often rooted in strong personal relationships and networks, which can help banks better understand their customers and build trust with them. This can lead to improved customer satisfaction and loyalty and increased business opportunities through referrals and recommendations. Moreover, social capital can facilitate information sharing and collaboration among banks and other stakeholders in the financial sector, such as regulators and suppliers. This can lead to a more efficient and effective banking industry, with improved risk management and better decision-making. Finally, social capital can also contribute to a more stable and resilient banking sector. By fostering trust and cooperation, banks can better weather economic shocks and overcome challenges, such as financial crises. In conclusion, social capital is an essential factor in the performance of the GCC banking industry, and its role should not be overlooked in efforts to improve the competitiveness and stability of the sector. Many academic fields of study have examined the critical relationship between IC and performance (Celenza, 2014; Singh et al., 2016; Inkinen, 2015). However, these investigations demonstrated that organisations continued to suffer from poor IC utilisation. Additionally, their knowledge management approach should be updated to incorporate IC as a plan component to reach their performance objectives (Wang et al., 2016). The GCC countries are attempting to develop a market based on diversification rather than oil, so they should manage their IC to achieve a competitive advantage (Buallay, 2019). This observation demonstrates that existing research and fundamental theories do not identify how IC affects company performance. This study aims to identify the moderation effect of corporate governance between intellectual capital and the GCC banking industry's performance. The remaining sections of this research are designed as follows: Section 2 defines the literature review towards the study variables; Section 3 focuses on illustrating the model used in the study as well as the hypotheses development; Section 4 shows the methodology used; Section 5 analysis the collected data; Section 6 discusses the findings and compare them with the results of previous studies; and finally, Section 7 represents conclusion which includes future research directions.

## **2. Literature Review**

### *2.1 Banking Industry in Gulf Cooperation Council (GCC)*

The GCC has a considerable influence on the alignment of forces in the League of Arab States, the Organization of the Islamic Conference, and the Non-Aligned Movement, notably influencing (through OPEC and OIAPEC) the state of things in the international oil market. Therefore, GCC controls the Islamic financial industry, accounting for 90 per cent of Sharia-compliant assets in the MENA area. The top 10 Islamic banks in the region, with \$ 400 billion in assets, are GCC-based banks. Moreover, there is a risk that this industry's current and impending wave of consolidation may have long-term negative impacts on competition if not handled with nuanced caution. In the Islamic banking industry context, Gulf states' Sharia-compliant assets topped \$262.6 billion at the end of 2018, representing 41% of that company's global worth of \$640 billion. Islamic banking business in the Gulf is becoming increasingly accessible to the rest of the world. Profit rates and income are higher than those of Iranian Islamic banks. The advantage of Islamic banking in the Gulf is that it is progressive and not descending. For instance, Al Rajhi Bank has become the most prominent Islamic bank listed in the financial markets in the world. In addition, the conventional banking industry is expected to increase slightly from 3.3% to 3.5% in 2020. Because the non-performing loans will be concentrated in the construction and real estate sectors, foreign banks function freely in Bahrain, Oman, the Emirates, and Qatar. At the same time, Saudi Arabia and Kuwait just opened the door to these institutions. Even though there are 28 international banks in the UAE, no new licenses have been awarded to international banks over the past twenty years.

### *2.2 Banking Performance*

The banking sector is considered a vital segment of a modern economy, so its efficiency is critical. In order to ensure a healthy financial system and an efficient economy, banks must be carefully evaluated and analysed. While banks help business organisations by rendering a wide range of products and services, the products and services are more or less identical from one bank to another, and there is little scope for differentiating between them (Shawtari, 2018). Therefore, measuring the banks' individual performance is necessary to determine their contribution to business development. Banks inevitably continue to attract significant attention from the public and scrutiny by financial regulators as there is a growing need to evaluate banks more efficiently. Not only supervising institutions, regulators and bank management bodies but also clients of banks are becoming increasingly concerned about the stability and sustainability of these financial institutions. There are other reasons to evaluate the performance of banks to determine their operational results and their overall financial condition; measure their assets quality, management quality and efficiency, and achievement of their

objectives; as well as ascertain their earning quality, liquidity, capital adequacy, and level of bank services (Buallay, 2019).

The bank performance analysis involves gathering formal and informal data to help customers and sponsors define and achieve their goals. Banks are also expected to provide evidence of their credit operations and financial flows as these influence the growth and economic development of the country. However, it is to be noted that the performance of banks cannot be easily measured since many of their products and services are of an intangible nature (J, 2014). Banking performance has been regarded as a crucial factor of economic growth. Efficiency and productivity change measures are rapidly used to evaluate banking performance. Academic researchers have been focusing on the efficiency and productivity of banking institutions for a long period, while economic growth is carried out in the discussions. Discovering research activities on banking performance and productivity in economic growth enables researchers to identify the local and international input to this particular discipline (Jan et al., 2019). It will allow researchers to identify the 'hot spots' discussed by academic researchers and find the research gaps. Indeed, banking performance in standings is a broad scientific topic, and estimating research activities might be useless. For instance, research activities in this area extended to several constituents, such as methodological and banking approaches.

Amuakwa-Mensah and Näsström (2022) suggest that performance measurement includes how employees refine their work and establish decision-making and the communication processes of improvement plans. Robert S. Kaplan (2009) describes performance measurement as reviewing an organisation's financial and non-financial goals. Numerous performance management topics and examples have been demonstrated in the literature on performance measurement (Amuakwa-Mensah et al., 2018). Traditional performance rankings rely on simple and consistent financial data, such as return on equity (ROE) and return on assets (ROA). However, these performance rankings may not highlight strategies that lead to top performance (Kumar & Prakash, 2019). Non-financial criteria such as customer satisfaction, communities (e.g., job creation and retention, spurring community revitalisation), and employees (e.g., "employees' professional training," "employee stability") can be vital to a bank's winning strategy. Using only ROA or ROE for performance ranking does not necessarily indicate which institutions offer the highest returns for their investors, and it does not accurately determine which institutions are the most profitable (Jan et al., 2019).

Therefore, performance measurement should be integrated with the business's overall strategy and include comprehensive criteria (i.e., financial and non-financial indicators) that an organisation can establish within its programs, investments, and acquisitions to reach the desired results. These criteria can help organisations identify performance problems, address root causes, drive improvement activities, and bridge the gap between short-term market or stakeholder expectations and long-term business or organisational goals/ objectives. In addition, performance measurements must be prioritised and focused so that only the strategic terms of the KPIs for the business are measured. There are many ways to evaluate banking performance (Shawtari, 2018). Many related studies have investigated banking performance's economies of scale and scope by applying traditional statistical methods, such as canonical correlation analysis, translog cost function (J, 2014), and log-linear models (Buallay, 2019).

### *2.3 Intellectual Capital Concept*

Intellectual capital (CI) is an important bundle of information that, irrespective of its size or scope, makes all ideas into CI if it helps the organization develop and operate by making it more efficient and competitive. The invention or creation of a new product, such as the change in process that used to take one month and was now cut up to one week, will also make biotechnology progress for a company as important as an error-free billing system. Intellectual capital is defined by Edvinsson (1997) as "the possession of knowledge, applied experience, organizational technology, customer encounters, and professional qualities that give the firm a competitive edge in the market. According to Allarakhia (2018), the modern atmosphere has changed; he defines intellectual capital as all that the personnel of an enterprise knows and gives it a competitive advantage. This sentence would distinguish the dynamic ramifications for managers and management consultants of people's intelligence. For these reasons, intellectual capital is defined as the sum of all the information that a company's employees have, giving it a competitive edge. "A business is like a tree," remarked Edvinsson and Sullivan (1996). There is a visible component (the fruits) and a hidden portion (the roots). In such a case, if you are solely concerned with the fruits, the tree may perish. The tree's roots must be healthy and well-nourished to grow and bear fruit. It also applies to enterprises in this regard: if we only focus on the fruits (financial success) and ignore the underlying ideals, the firm will collapse in the long term. In this way, knowledge management must establish optimal conditions for enhancing the exchange of information and the development and socialization of knowledge. In this way, the organizational capacity allows worker development and the generation of innovations in the company's various systems.

In short, an organization open to learning must be pursued. In this sense, intellectual capital h the way of doing business have changed through the generation of value and, therefore, the transformation of the economy. In short, the market is increasingly competitive. In other words, it contributes to companies perfecting or improving the offer of goods and services, consequently increasing customer satisfaction. In this sense, companies must develop intellectual capital to generate competitive advantages. According to SRI (2016), banks generate financial products and services, with which banks add value to financial market development; in this regard, it is essential to mention that banks play an important role in the economy since they are sources of wealth. In this way, Irawanto et al. (2017) mentioned that intangible elements

such as intellectual capital create necessary conditions, generating sustainable competitive advantages over time. Therefore, today, the determination of intellectual capital within a bank is vital for generating wealth, which, in turn, allows it to be a factor that adds value. According to Mohapatra et al. (2019), “basic economic resources, land, labour and capital, have been replaced by knowledge over time”; They also mention a new way of generating wealth that is represented by opportunity, creativity, added value, information, technology, productivity, among others, all of which are applications of intellectual capital”.

In other words, the expansion of a bank is heavily reliant on its employees, who enable a firm to remain active and compete in the market through their concepts, knowledge, talents, and experience. However, it is vital to develop new and enhanced intellectual capital capabilities that enable competitive advantage development. They have the impact of attaining money, employment, and market placement due to the proper growth of intellectual capital. According to Ozkan et al. (2017), Human capital combines an organization’s employees and managers’ talents, knowledge, skills, and experience. According to Liu & Jiang (2020), these resources may be classified into three types: competencies (knowledge, aptitudes, talents, and know-how), attitudes (motivation and leadership capacity), and intellectual agility (innovation capacity and entrepreneurship, adaptation and creation of synergies, etc.). Secundo et al. (2020) provide a conceptual contribution by focusing on human capital as the primary engine of organizational value generation.

The arrival of the intellectual capital concept on the agenda for the first time coincides with the late 1960s. Drucker (1995) related to this pioneering period, in which the concept of knowledge and the effect of performance information are related, stated that information is a resource that is located at the centre of key sources beyond geographical boundaries and that creates a competitive advantage to the business within the market. Sveiby pioneered the development of accounting methods suitable for intangible assets, expressing the need to evaluate human capital. He gathered all his work in 1989 in his book “The Invisible Balance Sheet” and proposed a theory for measuring information capital. Influenced by Sveiby’s ideas, Leif Edvinsson renamed intangible assets as intellectual capital.

Intellectual capital is defined and described in many ways today. Although there is not only one environmental definition accepted by all scientific authorities, the recipes proposed to date have helped to look at the concept of intellectual capital from different perspectives. Before considering the concept of intellectual capital as a whole, it will be useful to examine the concepts of “intellectual” and “capital” separately to make a healthy introduction to the subject and to make a better analysis. First, it is worth noting that the word intellectual was originally based in Latin, and its origin is an intersection. It means and expresses the relationship between Inter. Reading in Lectio means the information obtained, reached, collected and collected. The encyclopedic definitions of the term are “Intellectual, those who come from all walks of society and who have a scientific, contemporary, advanced worldview” or “People who are intellectual, intensely reflective and named as intellectuals in the society”. Adesina (2019) describes it as a value creator and a possible source of innovation for the corporation, that is, the core from where organizational ideas emerge. Human capital, in this sense, is a distinguishing source of competition. Oppong and Pattanayak (2019) stated that human capital must be defined as “the talents of employees required to give solutions to clients.” However, this idea relates to a company’s members’ capacity to please or meet clients’ expectations. Although this definition may appear acceptable from a general standpoint, it is clear that it has a limiting character because it excludes, from an internal perspective, the attitude of individuals, which is also important when executing an action to solve a customer problem, and, from an external perspective, other members or entities with whom you may have a relationship.

Structural capital is an important strategic resource encompassing nonhuman asset, such as information systems, routines, procedures, and databases (Cabrita & Bontis, 2008). They posit that structural capital holds an organization together due to its capability to develop tools to retain, package and share knowledge throughout the value chain. According to Asiaei et al. (2015), structural capital is seen as acquired knowledge via an organization and is inseparable from the firm. It can involve organizational structures, procedures, routines, systems, hardware, databases, and organizational cultures. Other elements exist, such as inventions, processes, copyright, patents, technologies, and system, which can classify under structural capital. Relational capital is the total of existing and potential resources that emerge from individual and/or organizational relation networks or are picked up through these networks. A firm’s relationship with its environment is also determined and directed by its relational capital. In this definition, clients, shareholders, opponents, and society build the “environment” of the firm. Social capital is the sum of the actual and potential knowledge embedded within the networks of mutual acquaintance and recognition among employees. The social network develops through informal interactions and provides the basis for trust and cooperation in an organization. It is important to differentiate between social and structural capital, as the latter includes formal procedures or managerial routines for gathering and storing individual knowledge. In contrast, in the case of social capital, informal and flexible interactions among organizational members could be another procedure to generate and share knowledge. Social capital can serve as a facilitator in transmitting the workforce’s uncodifiable knowledge, while structural capital cannot transfer organizational members’ tacit knowledge to a firm’s repository completely.

#### *2.4 Corporate Governance in the GCC*

Corporate governance systems integrated into a country's laws, governing framework, and organisations differed widely and were at varying stages of development across the six GCC states. According to the Hawkamah-IIF Comparative

Survey of Corporate Governance in the Gulf Cooperation Council study, Oman, Kuwait, and Saudi Arabia have superior corporate governance frameworks than Qatar, Bahrain, and the United Arab Emirates (AL-Rashed, 2020). In establishing the Gulf International Bank ("the Bank") in 1975, the principles of sound corporate governance were laid down in its founding agreement and by its founding by the governments of the GCC countries to establish the Bank. Effective in dealing fairly with all parties involved and achieving efficiency and professional credibility. Over the years, the Bank has adopted corporate governance standards for financial institutions whose shares are traded, although not listed companies. Since 2003, the Bank has published the Governance Report in its Annual Report. In 2010, the Central Bank of Bahrain (CBB) introduced new standards for the governance of banks operating in Bahrain, while GIB has already established several standards and procedures that reflect the highest standards of corporate governance practices, such as defining the Board's overall powers Management, members of the Board and members of committees of the Council, and developed Rules of Conduct in Arabic and English (Code of Conduct).

Corporate governance practices (CGP) impact corporate performance and survival. Countries that have adopted excellent corporate governance frameworks, particularly, have enjoyed tremendous development in the business sector and so attract more capital (Ahmed Sheikh and Wang, 2012). However, in the Arab world, CGP structure literature is relatively limited and inadequate (Zaid et al. 2020). According to Zaid et al. (2020), the board size, board independence, and CEO duality are significant determinants of CGP effectiveness. Udin et al. (2016) emphasise the significance of ownership structure as a CGP that influences organisational success and failure. Thus, the study considered board size, board independence, CEO duality, and ownership structure as crucial CGP.

## *2.5 Theoretical Framework*

### *2.5.1 Intellectual Capital Theory*

The term intellectual capital was first introduced by Jon Kenneth Galbraith in 1969 (Chang and Hsieh, 2010; Khalique et al., 2011b). There are many closely related definitions of intellectual capital and intellectual capital researchers present explanations of its role. Kozak (2011) pointed out that the concept of intellectual capital is still underdeveloped, and no uniform definition is accepted for identifying its subcomponents. Intellectual capital is a stock of focused and organized information (knowledge) that the organization can use for productive purposes (Edvinsson and Sullivan, 1996). The shortest and snappy definition of intellectual capital is presented by Stewart (1997, p.67) as 'packaged useful knowledge'. Stewart (1997) stipulated that intellectual capital is a total stock of the collective knowledge, information, technologies, skills, expertise, intellectual property, customer loyalty, and team management that can be used to create value for the products and services in organizations. Roos and Roos (1997) stated that intellectual capital is in the heads of organizational members (human capital) and what is left in the organization. Edvinsson (1997) defined intellectual capital as the sum of human and structural capital. Stewart (1997) extended intellectual capital into three parts: human, customer, and structural.

This theory considers three resources that have been theoretically linked to the competitive advantage of the bank where it deals exclusively with the knowledge created and accumulated in the three capital components of the company, namely in its people (human capital), social relations (social capital), and systems and processes (bank capital). According to Luthy (1998), human capital includes the knowledge, skills, and abilities of employees; structural capital is everything in a bank that supports employees (human capital) in their work; process capital includes the techniques, procedures, and programs that implement and enhance the delivery of goods and services; and customer capital is the strength and loyalty of customer relations. To gain from the advantage of the exploitation of knowledge as a separate resource, firms need well-trained people/employees (human capital) who can develop and use knowledge (Buta, 2015). According to Barney (1991), human capital theory is related to the resource-oriented perspective of firms. According to this viewpoint, a bank has a sustainable competitive advantage when it possesses human resources that cannot be reproduced or substituted by its competitors in the market. The competitive advantage is acquired by employing strategies that vary from those employed by its competitors; hence, each bank will seek out (consciously or unconsciously) unique resources that are impossible to mimic, reproduce, or replace. Arguments lead this study to assert that the asset of knowledge and what it means becomes the ultimate resource for companies — the resource which ensures/mainstays competitive benefit — so that the human resources of the company as equivalent to human resources become a temporary vector with hard to replace or imitate knowledge (Manolescu et al. 1998). This theory argues intangible resources are not seriously discussed due to the firm's emphasis on tangible resources. Thus, this study proposes intangible resources (intellectual capital) that should be addressed to achieve a competitive advantage for public infrastructure in GCC for better bank performance. This study focuses on three basic forms of intellectual capital to be discussed in this study.

### *2.5.2 Agency Theory*

The agency theory conceives the company as a legal function, which through a contractual link, unites the relationships between individual economic agents, where each party seeks to maximize its utility. For this purpose, the shareholder (principal) delegates to the directors (agents) an administrative task, which is reflected in the maximization of benefits. Within this framework, Tran and Vo (2022) agree that power and influence rest with both the principal and the agent, who have the power to make decisions in negotiations in order to seek to achieve their objectives effectively and

efficiently. Undoubtedly, this theory is used both in the fields of finance and corporate governance, since it allows analyzing, clarifying, and explaining the behavior of each party in order to maximize utility. However, for Tiwari (2022), there are usually conflicts between the parties, which increase due to the informational disadvantage of the owners with respect to the managers and due to the appreciation of the ownership of the company. Regarding the difference in information, managers have a greater incentive to disclose information to shareholders in order to reduce monitoring costs, improve their image, and justify results. This situation occurs due to the evaluation of the actions of the agent, who can direct the organizational interest to pursue a particular interest, which is why organizational control is exercised. This effort is due to the fact that the main one seeks to prevent the administration from acting to the detriment of the entrusted activities by providing insufficient effort to errands such as research, creativity, innovation, and strategy design.

### **3. Research Model and Hypotheses**

The financial crises that have led to corruption and bad management are the result of the concept of corporate governance (Orazalin et al., 2016), which is important in terms of the most important concepts. The precedents are that these crises have cost investors billions of dollars and led to the collapse of the financial institutions of the companies and the establishment of the financial institutions. In order to prepare for the results of the corruption and mismanagement, these investors have demanded evidence and proof of the companies' commitment to applying the principles of governance prior to investing in them, which made the companies that are available in the system. Corporate governance has ignored as one of the intellectual capital components by some authors such as Pulic (2008) and Bayraktaroglu et al. (2019). In this regard, Xue et al. (2018) criticize the lack of intellectual capital theory to the role of knowledge governance, which can be represented by controlling the knowledge generated by the intellectual capital. Rosman et al. (2018) support the view of Xue et al. (2018) that neglecting the role of intellectual capital governance limited the bank capability and resources, which gain the competitive advantage. According to Cantarelli (2020), corporate governance represents to which extent the bank is able to emerge the knowledge generating with its human and structural capital.

According to Ng (2006), the interplay between intellectual capital and corporate governance, for which R&D expenditure was employed as a proxy, has a beneficial influence on business performance. Information technology governance is a sub-component of structural capital (Edvinsson and Malone, 1997). It is the capacity to create new information by building on current information (Chang, 2007) and then transferring that new information into new goods or services inside the bank. A bank that focuses on research and development would also use and, as a result, grow its bank knowledge. As a result, the quality and amount of corporate governance may alter the impact of intellectual capital on bank performance, not just for technology businesses but also for banks (Bayraktaroglu et al. 2019). It is possible that in this study, corporate governance efficiency will have a positive moderating influence on the link between intellectual capital and banks performance. Hence, this study employed the corporate governance as a moderator factor, which has a potential strengthening of intellectual capital components toward the bank performance.

The agency theory is applied to explain the intervening role of corporate on IC and corporate performance. The agency theory argues that an agency relationship exists when the principal hires a person (the agent) under a specified contract to carry out duties and responsibilities on behalf of the principal. The agents are represented by the managers and staff of an organization, while the shareholders or owners are the principals. The managers and staff are employed (paid) to work on behalf and for the best interest of the shareholders by increasing the value of the company. Hence, it is the responsibility of the board of directors and its audit committee to ensure effective corporate governance takes place in an organization. The study of Liedong (2019a) found that CEO duality moderates the impact of social capital and bank performance significantly and positively. Other studies such as Ahmad et al. (2019) tested the moderation of board characteristics between structural capital and organizational performance. The result found that board characteristics do not moderate the impact of structural capital on the organizational performance. While, T. Nawaz (2019) found that the effective implementation of corporate governance showed a significant and positive improvement on the role of intellectual capital toward the firm performance.

Based on the above arguments, the current research hypothesizes the following:

- H 1: Corporate governance moderates the relationship between human capital and bank performance.
- H 2: Corporate governance moderates the relationship between structural capital and bank performance.
- H 3: Corporate governance moderates the relationship between social capital and bank performance.
- H 4: Corporate governance moderates the relationship between relational capital and bank performance.

### **4. Methodology**

To accomplish the study's objective, a set of gathered data was analyzed to test the moderation effect of corporate governance dimensions (board size, ownership structure, CEO duality) between intellectual capital elements (human capital, structural capital, relational capital, and social capital) on the performance of GCC-listed banks. The data for this study was derived from the annual reports of GCC securities market-listed banks. The retrieved data spans from 2013 to 2019, based on a quarterly basis. Selecting the time period from 2013 as some of the GCC countries did not implement the corporate governance code prior to 2013, as drafting governance codes by the GCC member states since 2002 starting with Oman and ending with Bahrain in 2010 and Kuwait in 2013 (Abdallah & Ismail, 2017). As a result, the estimated

total number of observations for each bank is 28, and the 58 listed banks have 1624 annual observations over the period 2013-2019. This study sample consisted of 58 listed banks from each GCC security market shown in Table 1.

Table: 1 The GCC Listed Banks

No	Security Markets	No of banks
1	Muscat Securities Market (Oman)	8
2	Saudi Security Market (tadawul)	12
3	Qatar stock exchange	9
4	Boursa Kuwait	9
5	Bahrain Bourse	7
6	Dubai Financial Market	13
Total		58

This study uses secondary data to find the moderation effect of corporate governance practices board independence, board size, CEO duality, and ownership structure, between intellectual capital and banking industry performance in the GCC. The banking industry performance was measured by using return on assets (ROA), return on equity (ROE), and earnings per share (EPS). Moreover, this study uses quantitative methods in the data collection process. The data of this study include archival data which is the data from the annual report of the selected companies. Data relating to the characteristics of the board independence, board size, CEO duality, ownership structure, government ownership, and executive compensation are collected from the banks' annual financial statements, and corporate performance data is collected from the financial statements of the company included in the annual financial statements of the selected banks. The data of this study is panel data, which spans from the period 2013 to 2020 based on annual basis.

## 5. Data Analysis and Results

### 5.1 The Moderation Effect of Corporate Governance Between the Intellectual Capital and the GCC Banking Industry Performance

The Pooled OLS, fixed effects (FE), and random effects (RE) techniques to analyze the moderation effect of corporate governance between the intellectual capital and the GCC banking industry performance. The Principal Component Analysis (PCA) used to establish the intellectual capital. Based on the result obtained from the PCS, the first component explained by 80.71% of the variance within the four components of intellectual capital, which has used as an index for the intellectual capital. Figure 5.1 shows that the first component has an initial eigenvalues higher than 1.

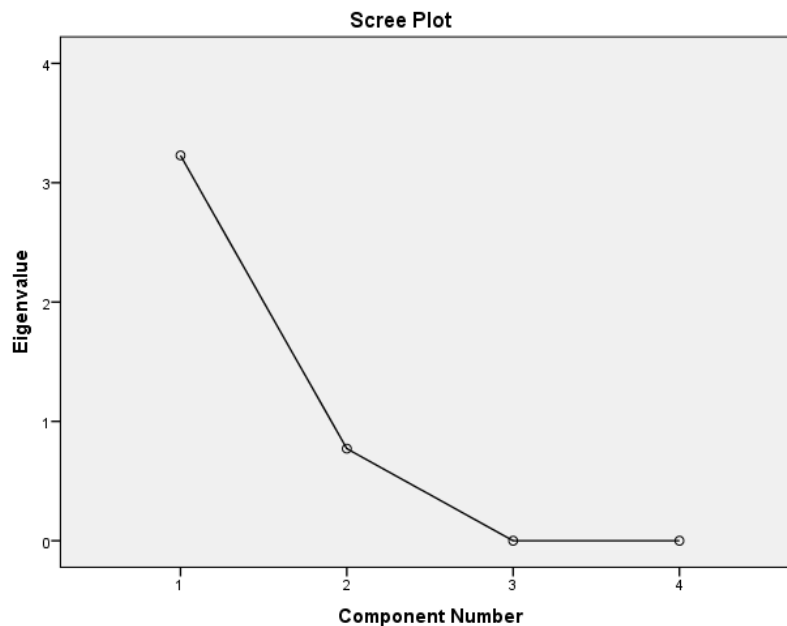


Figure: 1 shows the scree plot

For the purpose of achieving the fifth objective, the intellectual capital index (ICI) has used to be tested with the banking industry's performance in terms of the moderation role of five corporate governance that board size, ownership structure, CEO duality, and board independence. Table 4.16 denotes OLS, fixed, and random effects estimation results.

Table: 2 Estimation Results for the Last Objective (I)

Independent Variables	Dependent Variable: ROA		
	Pooled OLS	Fixed Effects	Random Effects



	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
ICI	0.044	0.019	0.042	0.023	0.043	0.022
ICI_BI	-0.041	0.029	-0.043	0.021	-0.044	0.020
ICI_BS	0.017	0.017	0.017	0.018	0.017	0.019
ICI_CD	-0.001	0.727	0.000	0.823	0.000	0.836
ICI_OS	0.025	0.311	0.022	0.392	0.021	0.403
SIZE	0.002	0.492	2.002	0.001	2.572	0.008
LEV	-0.005	0.327	-0.007	0.219	-0.007	0.217
VAICI	-0.013	0.001	-0.014	0.001	0.014	0.001
Constant	0.067	0.337	0.073	0.309	0.073	0.318

Dependent Variable: ROE

Independent Variables	Pooled OLS		Fixed Effects		Random Effects	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
ICI	0.015	0.581	1.816	0.072	20158.000	0.042
ICI_BI	0.007	0.810	1.705	0.059	3.005	0.000
ICI_BS	0.000	0.972	1.601	0.089	2.111	0.045
ICI_CD	-0.001	0.706	-0.001	0.695	-0.001	0.704
ICI_OS	-0.054	0.153	-0.047	0.214	-0.047	0.230
SIZE	-0.001	0.880	2.001	0.036	2.240	0.003
LEV	0.005	0.497	0.005	0.504	0.005	0.539
VAICI	-0.003	0.650	-0.003	0.650	-0.003	0.666
Constant	0.130	0.216	0.092	0.400	0.092	0.511

Dependent Variable: EPS

Independent Variables	Pooled OLS		Fixed Effects		Random Effects	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
ICI	0.077	0.221	2.077	0.023	2.177	0.002
ICI_BI	-0.067	0.289	-0.067	0.293	2.067	0.009
ICI_BS	0.007	0.784	0.006	0.801	2.087	0.008
ICI_CD	-0.006	0.280	-0.006	0.269	-0.006	0.290
ICI_OS	0.000	0.995	0.007	0.932	0.000	0.996
SIZE	-0.003	0.771	2.004	0.008	2.443	0.005
LEV	0.030	0.100	0.029	0.117	0.030	0.107
VAICI	0.029	0.033	0.034	0.019	0.029	0.037
Constant	0.319	0.176	0.346	0.161	0.319	0.185

### 5.2 Pooled OLS Estimates

The OLS results show that the moderation effect of ownership structure and human capital, as specified in equation (3.5), reports a positive and non-significant impact on return on assets. Also, the moderation impact of CEO duality and human capital indicates a negative and non-significant impact on return on assets. Likewise, the interaction effect of board independence and human capital indicates a negative and non-significant impact on return on assets. This result contradicts the hypothesis of the study. In contrast, the moderation impact of board size and human capital indicates a positive and significant impact on return on assets. For instance, a 1 percent increase in (Lvhc\*bs) results in a 0.300 percent increase in (ROA). This result is consistent with the hypothesis. The firm size found with a significant effect on return on assets ( $\beta_3 = 0.131$ , Prob < 0.01), also the leverage variable found with a significant effect on the return on assets ( $\beta_4 = 0.320$ , Prob < 0.01). The OLS results show that the intellectual capital index has non significant effect on return on equity ( $\beta_1 = 0.015$ , Prob > 0.01). Likewise, table 2 indicates that all of the moderation effects of (board independence, board size, CEO duality, and ownership structure) and intellectual capital index indicates non-significant impact on return

on equity. Table 2 also indicates that (firm size, leverage, and value added intellectual capital index) have no significant impact on return on equity with (Prob > 0.01).

Furthermore, the OLS results show that the intellectual capital index found with no impact on earnings per share ( $\beta_1 = 0.077$ , Prob > 0.01). Likewise, table 2 indicates that all of the moderation effects of (board independence, board size, CEO duality, and ownership structure) and intellectual capital index indicates non-significant impact on earnings per share. Also, table 2 also indicates that (firm size and leverage) have no significant impact on earnings per share with (Prob > 0.01). Finally, the OLS results indicated that value added intellectual capital index has a significant effect on return on assets ( $\beta_8 = 0.029$ , Prob < 0.05).

### 5.3 Fixed and Random Effects Estimates

Like the OLS estimates, the RE and FE estimates ascertain that the moderation effect of ownership structure, CEO duality, and board independence has no significant impact on the relationship between human capital and return on assets. In contrast, the moderation impact of board size and human capital indicates a positive and significant impact on return on assets. The firm size found with a non-significant effect on return on assets, also the leverage variable found with a non-significant effect on the return on assets. In terms of fixed effect, table 2 showed that there is nonsignificant impact of intellectual capital index on return on equity ( $\beta_1 = 1.816$ , Prob > 0.01). The fixed effect test also revealed that (board independence, board size, CEO duality, and ownership structure) do not moderate the relationships between intellectual capital index and return on equity. Furthermore, it was found that the firm size has a positive and significant impact on return on equity with ( $\beta_6 = 2.001$ , Prob < 0.05). Also, it was found that (leverage and value added intellectual capital index) have nonsignificant impact on return on equity. Also in terms of fixed effects, table 2 showed that there is a positive and significant impact of intellectual capital index on earnings per share ( $\beta_1 = 2.077$ , Prob < 0.05). Furthermore, the (board independence, board size, CEO duality, and ownership structure) do not moderate the relationships between intellectual capital index and earnings per share. The firm size found with a significant effect on earnings per share ( $\beta_6 = 2.004$ , Prob < 0.01), while the leverage found with nonsignificant impact on earnings per share. Finally, the value added intellectual capital index found with a significant effect on the earnings per share ( $\beta_8 = 0.034$ , Prob < 0.05).

In terms of random effects, the results indicates that there is a positive and significant impact of intellectual capital index on return on equity ( $\beta_1 = 20158.000$ , Prob < 0.05). The results in table 2 indicates that board independence has a moderation effect for the relationship between intellectual capital index and return on equity with ( $\beta_2 = 3.005$ , Prob < 0.01). Also, board size has a moderation effect for the relationship between intellectual capital index and return on equity with ( $\beta_3 = 2.111$ , Prob < 0.05). Also, it was found that (CEO duality, and ownership structure) do not moderate the relationships between intellectual capital index and return on equity. This test has revealed that firm size found with a significant effect on return on equity ( $\beta_6 = 2.240$ , Prob < 0.01). Finally, table 2 shows that (leverage and value added intellectual capital index) do not have impact on return on equity. Also in terms of random effects, table 2 showed that there is a positive and significant impact of intellectual capital index on earnings per share ( $\beta_1 = 2.177$ , Prob < 0.01). The results in table 2 indicates that (board independence and board size) have moderation effects for the relationship between intellectual capital index and earnings per share with ( $\beta_2 = 2.067$ , Prob < 0.01) and ( $\beta_3 = 2.087$ , Prob < 0.01) respectively. It was also found that (CEO duality, and ownership structure) do not moderate the relationships between intellectual capital index and earnings per share. This test has revealed that firm size found with a significant effect on earnings per share ( $\beta_6 = 2.443$ , Prob < 0.01). Also, the value added intellectual capital index found to have a significant and positive impact on earnings per share ( $\beta_8 = 0.029$ , Prob < 0.05). Finally, the leverage found not having impact on earnings per share.

### 5.4 The Best Method of Estimation

To identify the appropriate model from the three methods, firstly Incremental F-test is performed to determine which model is the best to choose between pooled OLS model and the fixed-effects model. In this vein, the null hypothesis ( $H_0$ ) is that all fixed effect constants are zero. The findings reveal that the F test = (F-test = 3.351, Prob < 0.01). As a result, the null hypothesis is rejected; therefore, the fixed effects (FE) model is more suitable than the pooled OLS model. Then, the Breusch-Pagan Lagrangian multiplier (LM) test for random effects was performed to choose between the pooled OLS and random-effects models. The results reveal a significant P-value of the LM test (Chi-bar-squared test = 17.42; Prob. < 0.01), showing significant random effects in our panel data set. Consequently, the null hypothesis ( $H_0$ ) is rejected, denoting that the RE model is better than the pooled OLS model. This result is shown clearly in Table 3.

Table: 3 Testing for random effects: Breusch-Pagan Lagrange multiplier test

Breusch-Pagan Lagrange multiplier test	Coefficient
Chi-bar-squared test value	17.42
P-value	0.000

After that, the Hausman test was performed to choose between two estimators (fixed-effects or random-effects). The null hypothesis ( $H_0$ ) of the Hausman test is that the individual effects are orthogonal to any independent variable in the model (in other words, the preferred model is the random effects) (Hausman, 1978). The findings, shown in Table 4, disclose a significant p-value of Hausman test (Chi-square test = 6.038; prob. < 0.01). Hence, the random effects estimator should

be rejected in favor of the fixed effects estimator.

Table: 4 Hausman's (1978) specification test

Hausman's (1978) specification test	ROA	ROE	EPS
Chi-square test value	6.038	4.090	4.730
P-value	0.000	0.848	0.785

## 6. Discussion and Implications

The current research has applied the Pooled OLS Estimates, Fixed Effects Estimates, and Random Effects Estimates, and they found that OLS results show that the moderation effect of ownership structure and human capital, as specified in equation (3.5), reports a positive and non-significant impact on return on assets. Also, the moderation impact of CEO duality and human capital indicates a negative and non-significant impact on return on assets. Likewise, the interaction effect of board independence and human capital shows a negative and non-significant impact on return on assets. This result contradicts the hypothesis of the study. In contrast, the moderation impact of board size and human capital indicates a positive and significant impact on return on assets. For instance, a 1 per cent increase in (Lvhc\*bs) results in a 0.29 per cent increase in (ROA). This result is consistent with the hypothesis. Like the OLS estimates, the RE and FE estimates ascertain that the moderation effect of ownership structure, CEO duality, and board independence does not significantly impact the relationship between human capital and return on assets. In contrast, the moderation impact of board size and human capital indicates a positive and significant impact on return on assets.

The OLS, FE, and RE results show that the moderation effect of corporate governance between the structural capital and return on assets is non-significant. Also, the moderation impact of board size and ownership structure on the relationship between value-added structural capital and return on assets is insignificant. This result is inconsistent with the theory. In contrast, the moderation impact of CEO duality, board independence, and value-added structural capital indicates a significant influence on return on assets. This result is consistent with the hypothesis. The OLS, FE, and RE results show that the moderation effect of corporate governance between the social capital and return on assets is non-significant. Likewise, the moderation impact of corporate governance on the relationship between value-added social capital and return on assets is insignificant. This result is inconsistent with the hypothesis. The OLS, FE, and RE results show that the moderation effect of corporate governance between the relational capital and return on assets is non-significant.

Similarly, the moderation impact of board independence on the relationship between value-added relational capital and return on assets is insignificant. This result is inconsistent with the hypothesis. In contrast, the moderation impact of ownership structure, CEO duality, and board size on the connection between value-added relational capital and return on assets is significant. This result is consistent with the hypothesis. The results indicated that all of the moderation effects of (board independence, board size, CEO duality, and ownership structure) and intellectual capital index indicate a non-significant impact on return on equity. The results indicate that all of the moderation effects of (board independence, board size, CEO duality, and ownership structure) and intellectual capital index indicate a non-significant impact on earnings per share. The fixed effect test also revealed that (board independence, board size, CEO duality, and ownership structure) do not moderate the relationships between the intellectual capital index and return on equity. Also, in terms of fixed effects, the results showed that the (board independence, board size, CEO duality, and ownership structure) do not moderate the relationships between the intellectual capital index and earnings per share. Regarding random effects, the results indicate that board independence has a moderation effect on the relationship between the intellectual capital index and return on equity with ( $\beta_2 = 3.005$ , Prob < 0.01). Also, board size moderates the relationship between the intellectual capital index and return on equity with ( $\beta_3 = 2.111$ , Prob < 0.05). Also, it was found that (CEO duality and ownership structure) do not moderate the relationships between the intellectual capital index and return on equity. Also, in terms of random effects, the results showed that (board independence and board size) have moderation effects on the relationship between the intellectual capital index and earnings per share with ( $\beta_2 = 2.067$ , Prob < 0.01) and ( $\beta_3 = 2.087$ , Prob < 0.01) respectively. It was also found that CEO duality and ownership structure) do not moderate the relationships between the intellectual capital index and earnings per share.

These results are supported by previous studies, where financial crises that have led to corruption and bad management result from corporate governance (Orazalin et al., 2016), which is important in terms of the most important concepts. The precedents are that these crises have cost investors billions of dollars and led to the collapse of the financial institutions of the companies and the establishment of the financial institutions. To prepare for the results of the corruption and mismanagement, these investors have demanded evidence and proof of the companies' commitment to applying the principles of governance before investing in them, which made the companies available in the system. The agency theory is applied to explain the intervening role of corporate on IC and corporate performance. The agency theory argues that an agency relationship exists when the principal hires a person (the agent) under a specified contract to carry out duties and responsibilities on behalf of the principal. The agents are represented by the managers and staff of an organization, while the shareholders or owners are the principals. The managers and staff are employed (paid) to work on behalf of and for the shareholders' best interest by increasing the company's value. Hence, the board of directors and its audit committee are responsible for ensuring effective corporate governance in an organization. The study by Liedong (2019a) found that CEO duality moderates the impact of social capital and bank performance significantly and positively. Other studies, such

as Ahmad et al. (2019), tested the moderation of board characteristics between structural capital and organizational performance. The result found that board characteristics do not moderate the impact of structural capital on organizational performance. At the same time, Nawaz (2019) found that the effective implementation of corporate governance showed a significant and positive improvement in the role of intellectual capital toward the firm performance.

## 7. Conclusion

Corporate governance is one of the topics of continuous importance in the accounting literature, where accounting studies in the last three decades have focused on studying different dimensions of corporate governance (Kassab, 2012, Steven & Yan, 2014), and it continues until now (as the controversy over the appropriate mechanisms has emerged) (Demirag et al. 2000; Stergios et al. 2013; Hisham et al. 2014). And because the company's weak performance can be seen as one of the by-products of inefficient governance mechanisms, recurring variables are proposed in governance mechanisms to improve both governance mechanisms and the performance of the bank. This study model tested corporate governance practices as a moderator variable. The corporate governance practices are represented by four practices: ownership structure, CEO duality, board size, and board independence. Based on the moderation finding, the larger the board size, the better the effect of human capital on performance. This result highlights the significant amount of board diversity, which provides several knowledge levels within the assigned board of the bank. In addition, CEO duality has a negative and significant moderating effect on the relationship between structural capital and bank performance. This result emphasized the separation of the chief executive officer position, which has better managed the structural capital of the bank, as the authority separation enables the board to take more control over the management. Furthermore, the ownership structure significantly affects the social capital effect on the bank's performance. This attribute is due to the enhancement of foreign experience in improving bank strategies globally. This study adds to the agency theory by investigating the role of corporate governance practices in managing the knowledge process within the bank and how they provide significant control over the bank's intellectual capital. Corporate governance practices such as board size, ownership structure, CEO duality, and board independence have proven their intervention in managing intellectual capital components effectively. Future studies can test the relationship among the intellectual capital, knowledge sharing, and innovation performance of banks from countries. Future studies may use objective indicators to retest the proposed hypotheses. This study recommends that banks need to adopt the quality of governance practices represented in the independence of the members of the board of directors, the non-duplication of the role of the first executive director, the independence of the members of the audit committee, and the availability of financial and accounting expertise in its members; This has positive effects on improving the bank's performance and maximizing its value.

## References

- Pillai, R., & Al-Malkawi, H.-A. N. (2018). On the relationship between corporate governance and firm performance: Evidence from GCC countries. *Research in International Business and Finance*, 44, 394-410.
- Salehi, M., Fahimi, M. A., Zimon, G., & Homayoun, S. (2021). The effect of knowledge management on intellectual capital, social capital, and firm innovation. *Journal of Facilities Management*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/JFM-06-2021-0064>
- Salehi, M., Tarighi, H., & Rezaeehad, M. (2017). The relationship between board of directors' structure and company ownership with corporate social responsibility disclosure. *Humanomics*, 33(4), 398-418. <https://doi.org/10.1108/H-02-2017-0022>
- Petratos, P. N., Ljepava, N., & Salman, A. (2020). *Blockchain Technology, Sustainability and Business: A Literature Review and the Case of Dubai and UAE (Sustainable Development and Social Responsibility—Volume 1 (pp. 87-93). Springer.*
- Ahmed, S. S., Guozhu, J., Mubarik, S., Khan, M., & Khan, E. (2020). Intellectual capital and business performance: the role of dimensions of absorptive capacity. *Journal of Intellectual Capital*, 21(1), 23-39. <https://doi.org/10.1108/JIC-11-2018-0199>
- Araya, A., Dahalan, J., & Muhammad, B. (2021a). Blockchain Technology and Regression Methods: A Case of Conceptual Framework. *International Journal of Business Society (ijo-bs)*, 5(11), 450-463. doi:10.30566/ijo-bs/2021.11.66
- Bharadwaj, N., & Shipley, G. M. (2020). Salesperson communication effectiveness in a digital sales interaction. *Industrial Marketing Management*, 90, 106-112.
- Buhalis, D., Harwood, T., Bogicevic, V., Viglia, G, Beldona, S. and Hofacker, C. (2019), "Technological disruptions in services: lessons from tourism and hospitality", *Journal of Service Management*, Vol. 30 No. 4, pp. 484-506, doi: 10.1108/JOSM-12-2018-0398.
- Blum, K. (2020). Future of sales 2025: why B2B sales needs a digital-first approach. Gartner. Retrieved, 5(10), 2021.
- Cortez, R. M., & Johnston, W. J. (2020). The Coronavirus crisis in B2B settings: Crisis uniqueness and managerial implications based on social exchange theory. *Industrial Marketing Management*, 88, 125-135.
- Waddill, D.D. (2018), *Digital HR: A Guide to Technology-Enabled Human Resources*, Society For Human Resource Management, Virginia.
- Nawaz, W., & Koç, M. (2020). Case Study: Qatar (Industry, University and Government Partnerships for the Sustainable Development of Knowledge-Based Society (pp. 71-106). Springer.
- Al-Azzawi, H., & Hasan, A. (2019). The Role of Sustainable Management in Small and Medium Enterprises, with Reference to Interior Design Firms in the Kingdom of Bahrain (Creative Business and Social Innovations for a Sustainable Future (pp. 291-298). Springer.
- Araya, A., Dahalan, J., & Muhammad, B. (2021b). Model of Heterogeneous Agents and Noise Traders' Risk: A Case of Conceptual Framework. *International Journal of Business Society (ijo-bs)*, 5(12), 493-502. doi:10.30566/ijo-bs/2021.12.70
- Khan, M. B., Iqbal, S., & Hameed, I. (2020). 2 Economic development vision of the Gulf Cooperation Council. *Research, Innovation and Entrepreneurship in Saudi Arabia: Vision 2030*, 17.
- Coombe, C., Reinders, H., Littlejohn, A., & Tafazoli, D. (2019). Innovation in Language Learning and Teaching: The Case of the MENA (Innovation in Language Learning and Teaching (pp. 1-18). Springer.
- Al-Sartawi, A. M. M. J. A. o. A., & Journal, F. S. (2018). Corporate governance and intellectual capital: Evidence from Gulf Cooperation Council countries.
- Araya, A., Dahalan, J., & Muhammad, B. (2022). The Relationship Between Financial Patterns and Exogenous Variables: Empirical Evidence from Symmetric and Asymmetric ADRL. *International Journal of Business Society*, 6(6), 638-661. doi:10.30566/ijo-bs/2022.06.90

- Mohapatra, S., Jena, S. K., Mitra, A., & Tiwari, A. K. (2019). Intellectual capital and firm performance: evidence from Indian banking sector. *Applied Economics*, 51(57), 6054-6067.
- Vo, D. H. (2018). Should bankers be concerned with Intellectual capital? A study of the Thai banking sector. *Journal of Intellectual capital*.
- Edvinsson, L. (1997). Developing intellectual capital at Skandia. *Long Range Planning*, 30(3), 366-373. [https://doi.org/https://doi.org/10.1016/S0024-6301\(97\)90248-X](https://doi.org/https://doi.org/10.1016/S0024-6301(97)90248-X)
- Iqbal, S., Nawaz, A., & Ehsan, S. (2019). Financial performance and corporate governance in microfinance: Evidence from Asia. *Journal of Asian Economics*, 60, 1-13.
- Al-ahdal, W. M., Alsamhi, M. H., Tabash, M. I., & Farhan, N. H. (2020). The impact of corporate governance on financial performance of Indian and GCC listed firms: An empirical investigation. *Research in International Business and Finance*, 51, 101083.
- Zeitun, R., Temimi, A., & Mimouni, K. (2017). Do financial crises alter the dynamics of corporate capital structure? Evidence from GCC countries. *The Quarterly Review of Economics and Finance*, 63, 21-33.
- Abdallah, A. A.-N., & Ismail, A. K. (2017). Corporate governance practices, ownership structure, and corporate performance in the GCC countries. *Journal of International Financial Markets, Institutions and Money*, 46, 98-115. <https://doi.org/https://doi.org/10.1016/j.intfin.2016.08.004>
- Buallay, A., Hamdan Allam, M., Reyad, S., Badawi, S., & Madbouly, A. (2020). The efficiency of GCC banks: the role of intellectual capital. *European Business Review*, 32(3), 383-404. <https://doi.org/10.1108/EBR-04-2019-0053>
- Buallay, A., Abuhommous, A. a. A., & Kukreja, G. (2021). The relationship between intellectual capital and employees' productivity: evidence from the Gulf Cooperation Council. *Journal of Management Development*, 40(6), 526-541. <https://doi.org/10.1108/JMD-05-2019-0210>
- Akkas, E., & Asutay, M. (2022a). The impact of intellectual capital formation and knowledge economy on banking performance: a case study of GCC's conventional and Islamic banks. *Journal of Financial Reporting and Accounting*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/JFRA-08-2021-0251>
- Akkas, E., & Asutay, M. (2022b). Intellectual capital disclosure and financial performance nexus in Islamic and conventional banks in the GCC countries. *International Journal of Islamic and Middle Eastern Finance and Management*, 15(5), 943-966. <https://doi.org/10.1108/IMEFM-01-2021-0015>
- Araya, A., & Miras, H. (2015). Determinant Risk Factors on Valuation of Banks' Stock Return. *International Journal of Accounting and Business Management*, 3(1), 353-367. doi:10.24924/ijabm/2015.04/v3.iss1/353.367
- Inkinen, H. (2015). Review of empirical research on intellectual capital and firm performance. *Journal of Intellectual capital*, 16(3), 518-565.
- Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, 30(1), 98-115. <https://doi.org/10.1108/MEQ-12-2017-0149>
- Shawtari, F. A. M. (2018). Ownership type, bank models, and bank performance: the case of the Yemeni banking sector. *International Journal of Productivity and Performance Management*, 67(8), 1271-1289. <https://doi.org/10.1108/IJPPM-01-2018-0029>
- Jan, A., Marimuthu, M., & Mat Isa, M. P. b. M. (2019). The nexus of sustainability practices and financial performance: From the perspective of Islamic banking. *Journal of Cleaner Production*, 228, 703-717. <https://doi.org/https://doi.org/10.1016/j.jclepro.2019.04.208>
- Amuakwa-Mensah, F., Klege, R. A., Adom, P. K., Amoah, A., & Hagan, E. (2018). Unveiling the energy saving role of banking performance in Sub-Saharan Africa. *Energy Economics*, 74, 828-842. <https://doi.org/https://doi.org/10.1016/j.eneco.2018.07.031>
- Amuakwa-Mensah, F., & Näsström, E. (2022). Role of banking sector performance in renewable energy consumption. *Applied Energy*, 306, 118023. <https://doi.org/https://doi.org/10.1016/j.apenergy.2021.118023>
- Kumar, K., & Prakash, A. (2019). Developing a framework for assessing sustainable banking performance of the Indian banking sector. *Social Responsibility Journal*, 15(5), 689-709. <https://doi.org/10.1108/SRJ-07-2018-0162>
- Irawanto, D. W., Gondomono, H., & Hussein, A. S. (2017). The effect of intellectual capital on a company's performance moderated by ITS governance and IT strategy integration employed by bank listed in Indonesian stock exchange. *The South East Asian Journal of Management*.
- Mohapatra, S., Jena, S. K., Mitra, A., & Tiwari, A. K. (2019). Intellectual capital and firm performance: evidence from Indian banking sector. *Applied Economics*, 51(57), 6054-6067.
- Ozkan, N. (2016). Intellectual Capital and Financial Performance: A Study of the Turkish Banking Sector Nasif Ozkan, Sinan Cakan b, Murad Kayacan c.
- Ozkan, N., Cakan, S., & Kayacan, M. (2017). Intellectual capital and financial performance: A study of the Turkish Banking Sector. *Borsa Istanbul Review*, 17(3), 190-198. <https://doi.org/https://doi.org/10.1016/j.bir.2016.03.001>
- Liu, C.-H., & Jiang, J.-F. (2020). Assessing the moderating roles of brand equity, intellectual capital and social capital in Chinese luxury hotels. *Journal of Hospitality and Tourism Management*, 43, 139-148. <https://doi.org/https://doi.org/10.1016/j.jhtm.2020.03.003>
- Secundo, G., Ndou, V., Vecchio, P. D., & De Pascale, G. (2020). Sustainable development, intellectual capital and technology policies: A structured literature review and future research agenda. *Technological Forecasting and Social Change*, 153, 119917. <https://doi.org/https://doi.org/10.1016/j.techfore.2020.119917>
- Saeed, M. A. Y., Bekhet, H. A., & Dhar, B. K. (2017). Constructing model to explore the influence of marketing audit on organizational performance—An innovative arena of marketing. *International Journal of Business Society*, 1(1), 37-47.
- Saeed, M. A. Y., & Bekhet, H. A. (2018). Influencing Factors of Mobile Marketing among Young Malaysian Customers. *Australian Journal of Basic and Applied Sciences*, 12(9), 63-72.
- Adesina, K. S. (2019). Bank technical, allocative and cost efficiencies in Africa: The influence of intellectual capital. *The North American Journal of Economics and Finance*, 48, 419-433. <https://doi.org/https://doi.org/10.1016/j.najef.2019.03.009>
- Adesina, K. S. (2021). How diversification affects bank performance: The role of human capital. *Economic Modelling*, 94, 303-319. <https://doi.org/https://doi.org/10.1016/j.econmod.2020.10.016>
- Oppong, G. K., & Pattanayak, J. K. (2019). Does investing in intellectual capital improve productivity? Panel evidence from commercial banks in India. *Borsa Istanbul Review*, 19(3), 219-227. <https://doi.org/https://doi.org/10.1016/j.bir.2019.03.001>
- AL-Rashed, W. E. (2020). Auditing for Corporate Governance in the GCC.
- Udin, S., Khan, M. A., & Javid, A. Y. (2017). The effects of ownership structure on likelihood of financial distress: an empirical evidence. *Corporate Governance: The International Journal of Business in Society*, 17(4), 589-612. <https://doi.org/10.1108/CG-03-2016-0067>
- Roos, G. (2017). Knowledge management, intellectual capital, structural holes, economic complexity and national prosperity. *Journal of Intellectual Capital*, 18(4), 745-770. <https://doi.org/10.1108/JIC-07-2016-0072>
- Tran Dai, B., & Vo Duc, H. (2018). Should bankers be concerned with Intellectual capital? A study of the Thai banking sector. *Journal of Intellectual capital*, 19(5), 897-914. <https://doi.org/10.1108/JIC-12-2017-0185>
- Tran, N. P., & Vo, D. H. (2022). Do banks accumulate a higher level of intellectual capital? Evidence from an emerging market. *Journal of Intellectual Capital*, 23(2), 439-457. <https://doi.org/10.1108/JIC-03-2020-0097>
- Tiwari, R. (2022). Nexus between intellectual capital and profitability with interaction effects: panel data evidence from the Indian healthcare industry. *Journal of Intellectual Capital*, 23(3), 588-616. <https://doi.org/10.1108/JIC-05-2020-0137>
- Orazalin, N., Mahmood, M., & Jung Lee, K. (2016). Corporate governance, financial crises and bank performance: lessons from top Russian banks. *Corporate Governance: The International Journal of Business in Society*, 16(5), 798-814. <https://doi.org/10.1108/CG-10-2015-0145>
- Pulic, A. (1998). Measuring the performance of intellectual potential in knowledge economy. (Ed.), (Eds.). 2nd McMaster Word Congress on Measuring and Managing Intellectual Capital by the Austrian Team for Intellectual Potential.

- Pulic, A. (2000). VAIC™—an accounting tool for IC management. *International journal of technology management*, 20(5-8), 702-714.
- Pulic, A. (2004). Intellectual capital – does it create or destroy value? *Measuring Business Excellence*, 8(1), 62-68. <https://doi.org/10.1108/13683040410524757>
- Bayraktaroglu, A. E., Calisir, F., & Baskak, M. (2019). Intellectual capital and firm performance: an extended VAIC model. *Journal of Intellectual Capital*, 20(3), 406-425. <https://doi.org/10.1108/JIC-12-2017-0184>
- Liedong, T. A. (2019a). Social Capital and Bank Lending: The Moderating Role of CEO Duality. *Academy of Management Proceedings*, 2019(1), 15736. <https://doi.org/10.5465/AMBPP.2019.15736abstract>
- Liedong, T. A. (2019b). Social Capital and Bank Lending: The Moderating Role of CEO Duality. (Ed.),^(Eds.). *Academy of Management Proceedings*.
- Ahmad, R., Bin Mohammad, H., & Nordin, S. B. (2019). Moderating effect of board characteristics in the relationship of structural capital and business performance: An evidence on Pakistan textile sector. *Journal of Studies in Social Sciences Humanities*, 5(3), 89-99.