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# INTELLECTUAL CAPITAL AND EARNINGS QUALITY, THE MODERATING ROLE OF POLITICAL CONNECTIONS IN JORDAN

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**ABSTRACT**

The separation of ownership from management in corporations has led to the emergence of entities where the interests of multiple related parties may conflict. Financial reports serve as reflections that demonstrate the level of profitability of these companies and provide the primary source of information that can be utilized by various stakeholders in evaluating their performance, predicting their sustainability, cash flow projections, etc. Consequently, earnings quality plays a significant role in attracting investments and fostering economic growth in countries. As Jordan is a developing nation striving to attract investments and open up to the world, this study investigates the factors influencing the level of earnings quality, particularly after reviewing previous literature indicating a decline in earnings quality in Jordan. The study adopts a research model that aligns with the agency and resource independence theories aimed at bridging the gap and elucidating the contrasting findings of previous literature by examining the roles of intellectual capital components in effect earnings quality, particularly considering that the Jordanian legislature does not require any form of disclosure for intellectual capital by Jordanian firms. Furthermore, the study explores the moderating role of political connections on the study's relationships. To achieve the study's objectives, the sample consists of non-financial Jordanian firms listed on the Amman Stock Exchange (ASE) from 2017 to 2020, and the modified Jones model (1995) was used as a proxy to measure earnings quality. Moreover, the research findings indicated that human capital has statistically significant effects on earnings quality, while the remaining variables were not. Likewise, pertaining to the moderator effect of political connection, the results showed that political connection significantly moderates the relationship between the structure capital, relational capital, and earnings quality. Finally, this study can serve as a guide for regulatory bodies such as the Jordan Securities Commission and Amman Stock Exchange in order to formulate new strategies and policies. Furthermore, this study is able to enhance the knowledge of academic researchers by filling up the gap in the literature.

**Keywords:** Intellectual capital, Earnings Quality, Political Connections, Jordan

## INTRODUCTION:

Earnings quality is a critical concept in financial accounting and analysis. It refers to the degree to which a company's reported earnings accurately reflect its underlying economic performance and financial

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position (Al-Othman & Al-Zoubi, 2019; Aldegis, Ganesan, Alorayni, & Sadaa, 2023). The assessment of earnings quality is essential for investors, analysts, regulators, and other stakeholders to make informed decisions about the value and risk of investing in a company (Alorayni, Ganesan, & Hashim, 2019).

On the same vine, the importance of earnings quality has been highlighted in recent years due to various high-profile accounting scandals and financial fraud cases. These financial scandals include big corporates such as, Enron in 2001, WorldCom in 2002, Parmalat in 2003, Satyam in 2009, Tesco Plc's in 2014, Pescanova in 2013 Toshiba in 2015, Patisserie Valerie in 2018, 1MDB in 2018 and the Germany firm Wirecard in 2020 (Huber, 2020; Jo, Hsu, Llanos-Popolizio, & Vergara-Vega, 2021; Melé, Rosanas, & Fontrodona, 2017; Tee & Rasiah, 2020; Wahab, Ariff, Marzuki, & Sanusi, 2017; Wan Mohammad, Wasiuzzaman, Morsali, & Zaini, 2018). These incidents have raised concerns about the credibility and reliability of financial statements and the need for greater transparency and disclosure by companies. As a result, there has been increased interest and scrutiny by researchers, practitioners, and policymakers in understanding the determinants and consequences of earnings quality.

Moreover, the quality of a company's earnings is crucial for several reasons. First, it affects the accuracy of financial statements, which are the primary source of information for investors and other stakeholders. If a company's reported earnings do not reflect its true economic performance, then investors may make incorrect decisions about the value of the company's stock. Second, earnings quality can affect a company's ability to access capital markets and attract investors. If a company's financial statements are deemed unreliable or of poor quality, then it may face difficulties in raising capital or may have to pay higher costs of capital.

In light of the significance of earnings quality, extensive research has been conducted on this subject in recent years. Researchers have developed various measures and methods to assess earnings quality, ranging from accrual-based methods to cash flow-based methods. They have also identified several determinants of earnings quality, including financial reporting standards, corporate governance, and audit quality. This study aims to shed light on the role of intellectual capital components in influencing the level of earnings quality in Jordan, particularly considering that Jordan is a developing country that does not place significant emphasis on the level of intellectual capital among companies listed on the Amman Stock Exchange which is in line with study by Alshhadat and Stenka (2017) where they have pointed out that the Jordanian government has yet to release any documents or reports that provide insights into the scale of investment in intellectual capital.

Additionally, the study investigates the role of political connections as a moderator variable in the relationship between intellectual capital and earnings quality. To the best of the researcher's knowledge, this study is the first to explore the moderating role of political connections among the study's relationships, contributing to bridging the gap and providing a more comprehensive explanation for this role in both the existing literature and legislative and policymaking arenas

## Literature review and hypothesis development:

### Earnings quality:

Earnings quality is a critical concept in financial economics and accounting, and it characterizes the functioning of corporates in various uses. The accounting literature examines the quality of recognized earnings to ensure accounting information quality (Al-Othman & Al-Zoubi, 2019). Researchers have operationalized accounting information quality to reveal earnings quality by ameliorating different

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characteristics (Francis, LaFond, Olsson, & Schipper, 2004; Muliati, Mayapadam, Parwati, Ridwan, & Salmita, 2021).

Several studies have been conducted on earnings quality, but no agreement has been reached regarding its definition and measures (Khan, Peddireddy, & Rajgopal, 2019). The primary source of information is provided in the form of financial statements (Lev, 1989). Stakeholders use earnings to predict a firm's future performance, and investors prefer earnings compared to other measures like cash flows or dividends. Equity valuation models integrate earnings as future cash flow predicted (Muliati et al., 2021).

The earnings quality evaluation is associated with the goals of decision-making (Dechow, Ge, & Schrand, 2010). Earnings quality is generally linked to relevant attributes, including predictability and persistence, accrual quality, value relevance, smoothness, conservatism, and timeliness (Dechow & Schrand, 2004, 2010; Muliati et al., 2021).

The study of Carmo, Moreira, and Miranda (2016) suggested that earnings quality is reliant on the model of financial reporting and the market environment. The flexibility of accounting rules and the presence of reporting incentives can lead to earnings management, resulting in a poorer quality of earnings. Companies with complex transactions, those in a volatile business environment, or those with high growth may not deliver earnings numbers that are proper indicators of future cash flow, even in the absence of earnings management. This, in turn, may be interpreted as an indicator of poorer earnings quality (Carmo et al., 2016)

Another aspect of earnings quality is the role it plays in evaluating management performance and compensation. The level of earnings quality affects the evaluation of management performance and the determination of their compensation (P. Dechow, Ge, & Schrand, 2010)

In conclusion, earnings quality is a crucial concept in financial economics and accounting, and it characterizes the functioning of corporates in various uses. Researchers have operationalized accounting information quality to reveal earnings quality by ameliorating different characteristics. Earnings quality evaluation is associated with the goals of decision-making and is linked to relevant attributes, including predictability and persistence, accrual quality, value relevance, smoothness, conservatism, and timeliness. The flexibility of accounting rules and the presence of reporting incentives can lead to earnings management, resulting in a poorer quality of earnings.

**Intellectual capital and earnings quality:**

The relationship between intellectual capital and earnings quality has been a topic of interest in the literature (Jaya, Agustia, & Nasution, 2021b). Intellectual capital is a key determinant of a company's intangible assets, including knowledge, expertise, and human capital. Earnings quality, on the other hand, pertains to the accuracy, transparency, and sustainability of a company's financial reporting (Khajavi, Ghadirian-Arani, & Fattahi-Nafchi, 2016).

One significant finding in the literature is that companies with a higher level of intellectual capital tend to have better earnings quality (Sarea & Shaima, 2016). This can be attributed to the fact that companies that invest in their intellectual capital tend to have a more knowledgeable and skilled workforce, leading to better decision-making and more precise financial reporting. Moreover, companies with a strong intellectual capital base are better equipped to identify and capitalize on new opportunities, resulting in higher profits and growth.

Prior studies have highlighted several factors that influence the relationship between intellectual capital and earnings quality. Effective knowledge management systems and training and development programs, for instance, facilitate the leveraging of intellectual capital for improved financial performance (Sarea & Shaima, 2016). Furthermore, innovation has been identified as a key factor in the interplay between intellectual capital and earnings quality. Companies that can innovate and introduce

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new products or services are more likely to achieve sustained growth and profitability, compared to those that are unable to do so (Khajavi et al., 2016).

Furthermore, prior studies have shown that the relationship between intellectual capital and earnings quality is not unidirectional, but rather reciprocal. This means that earnings quality can also have a positive impact on intellectual capital. Companies that have a reputation for producing reliable and transparent financial reports are more likely to attract investors, which can lead to an increase in capital that can be used to invest in intellectual capital (Mojtahedi, 2018).

Moreover, the relationship between intellectual capital and earnings quality is context-dependent (Khajavi et al., 2016). For example, in highly innovative industries such as technology and pharmaceuticals, intellectual capital may be the primary driver of earnings quality. In contrast, in more mature industries such as banking and utilities, earnings quality may depend more on factors such as regulatory compliance and financial risk management.

Another interesting finding is that intellectual capital can help companies to navigate periods of economic uncertainty or market volatility (Sowaity, 2022). During times of crisis, companies with a strong intellectual capital base are better equipped to adapt to changing market conditions and identify new opportunities for growth.

Overall, the literature highlights the importance of intellectual capital as a key determinant of earnings quality. Companies that prioritize the development and management of their intellectual capital are more likely to achieve higher levels of earnings quality, which can lead to increased profitability, growth, and stakeholder value. However, the relationship between intellectual capital and earnings quality is not straightforward and is influenced by a range of contextual factors that need to be taken into account when assessing the interplay between these two constructs.

**Human capital and earnings quality:**

In a logical manner, human capital is embedded in the creativity of workers. Human capital consists of elements such as expertise, knowledge, talents, experience, and skills (Jaya et al., 2021b; Sydler, Haefliger, & Pruksa, 2014). According to Snell and Dean Jr (1992) and Lee, Swink, and Pandejpong (2011), human capital will be greater if there are highly skilled employees with knowledge and skills. Skilled employees can be regarded as an asset to an organisation, particularly those with professional expertise and adequate knowledge.

A few studies looked into the connection between human capital and earnings quality (Darabi, Rad, & Ghadiri, 2012; Darabi, Rad, & Heidaribali, 2012; Jaya et al., 2021b; Khajavi et al., 2016; Sarea & Shaima, 2016; Zanjirdar & Chogha, 2012). Based on the results, a significant positive relationship was found between human capital and earnings quality. Based on the statistical results of Darabi, Rad, and Ghadiri (2012), intellectual capital and its human capital component have a significant positive impact on earnings quality among 948 firm-year observations in Iran Stock Market. Khajavi et al. (2016) and Sarea and Shaima (2016) revealed that human capital has a significant impact on earnings quality. The same result has been found in the study by Hatane, Halim, and Tarigan (2019), where they mentioned that having more knowledge and experience made employees perform better at managing accruals, which might result in higher-quality earnings.

Likewise, in Indonesia, Jaya et al. (2021b) results prove that human capital has a significant effect on earning management. These results comply with the resource dependency theory, which is used as the theoretical underpinning for the relationship between the intellectual capital as the firm's significant resources and the earnings quality, where according to the theory, the companies benefit from focusing on human capital like training their employees and using their skills, knowledge to enhance their

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monitoring roles, where skilled employees can be regarded as an important component for the firm that increases the level of earnings quality (Alshirah, Alshirah, & Lutfi, 2021; Hillman & Dalziel, 2003). Therefore, the following hypothesis is formulated:

*H1: There is a significant positive relationship between human capital and earnings quality.*

**Structure capital and earnings quality:**

Roos, Edvinsson, and Dragonetti (1997) explained that structural capital is what remains in the firm when the job is completed like patents, brands, organisational structure, concepts, and processes. Bontis (1998) clarified that the total intellectual capital would not achieve its fullest capacity if the organisation's processes and structures are weak in controlling the action. Chen, Zhu, and Yuan Xie (2004) argued that structural capital involves corporate culture, information technology and explicit knowledge, which helps support employees' endeavours to have the highest intellectual and overall business performance. Moreover, Mojtahedi (2018) described structural capital as a level of knowledge and technology that has been internalized by corporations; as structural capital increases, so does the quality of information shared with stakeholders. As a result, risk-averse management will rely less on information based on discretionary accruals, thereby increases the level of earnings quality.

Based on the review of the literature, few studies only investigated the important role of structural capital in enhancing earnings quality (Darabi, Rad, & Ghadiri, 2012; Hatane et al., 2019; Khajavi et al., 2016; Mojtahedi, 2013; Sarea & Shaima, 2016; Zanjirdar & Chogha, 2012). Hatane et al. (2019) justified that structural capital might have a positive effect on the quality of earnings. Technology can help to increase it, which raises structural capital efficiency. Since this technology may easily supply information, management relies less on effective earning management techniques. Likewise, The results of Jaya, Agustia, and Nasution (2021a) study resolved that structural capital has a significant effect on earning management among Indonesian companies. Moreover, Khajavi et al. (2016) and Darabi, Rad, and Ghadiri (2012) examined the impact of structure capital on earnings quality, concluding that structure capital has an insignificant effect on earnings quality. In Bahrain, Sarea and Shaima (2016) found no significant relationship between structure capital and earnings quality. However, by employing a sample of 100 firms in Malaysia from 2000 to 2011, Mojtahedi (2013) found that structure capital is positively associated with earnings quality. This outcome confirms the resource dependence theory, which suggests that the various resources of companies such as "structures capital" affect the behavior of the organisation and influence the firm's decision-making, including the outcomes in earnings quality (Mohammed, Ahmed, & Ji, 2017). Therefore, hypothesis (8) is formulated as follows:

*H2: There is a positive relationship between structured capital and earnings quality.*

**Relational capital and earnings quality:**

Relational capital is the potential of the organisation in dealing with and benefiting from relationships with external stakeholders. This intangible relationship includes the knowledge embedded in customer relations, interactions with suppliers and government, or related industry associations (Bontis, 1998). Bontis (2001) broadened this definition by arguing that relational capital captures any positive relationships with third parties like customers and suppliers. Furthermore, Mojtahedi (2018) argued about the relationship between relational capital and earning quality that whatever a corporate has a stronger relationship with its customer, this leads to an increase in the number of them and the attraction of satisfied customers will increase as a result of that the level of income and cash volume in the

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corporate will increase, so the amount of not discretionary (normal) accrual will decrease, then the quality of earning will improve.

Many theoretical and empirical studies in the literature have indicated that low firm performance is one reason for earnings management and low earnings quality (Watts & Zimmerman, 1990; Weisbach, 1988). The study by Madhumathi and Ranganatham (2011) indicated that firms that exhibit poor performance are expected to engage in accounting tactics such as window dressing to present a better picture of their earnings that show poor earnings quality. In other words, there is a positive relationship between firms' performance and earnings quality.

Accordingly, a positive effect was found between relational capital and the earnings quality (Baum & Silverman, 2004; Bontis, 1998; Chang, 2004; Prester, 2016). Darabi, Rad, and Heidaribali (2012) create a positive correlation between earnings quality and relational capital. Mojtahedi (2013) has also examined the effect of relational capital on earnings quality. The results showed that relational capital positively affects earnings quality which is the ninth hypothesis of the study is postulated:

*H3: There is a significant positive relationship between relational capital and earnings quality.*

**The moderating effect of Political connections in the relationship between the IC componants and earnings quality.**

In the review of existing literature, there were no conceptual or empirical studies that looked at the moderating role of political connection on the relationship between intellectual capital and earnings quality, only a few studies examined the direct association between political connection and intellectual capital. Hou, Hu, and Yuan (2017) examined non-state-owned firms, and they found that political connections hinder intellectual capital where the board of directors uses their power and the political role of board members to reduce the level of the firm intellectual capital to be consistent with their interests. The statistical results of Tsai, Zhang, and Zhao (2019), which included all Chinese listed firms, indicated that political connections positively affect intellectual capital, and justified the study result that the generalized trust in firms induced by political connections which may help firms acquire more intellectual capital, such as human capital. The findings do not contradict the theory of resource dependency whereby the level of political connections in the board of directors as an essential resource in the organisation affects the firms' decision making as well as the level of application of intellectual capital which influences the outcomes regarding the financial reporting and earnings quality (Mohammed et al., 2017). To add up, the review of the literature revealed inconclusive results about the association between intellectual capital and quality of earnings, therefore, the present study will implement the political connection variable as a moderator to strengthen the relationship between intellectual capital and earnings quality. Thus, further hypotheses of the study are postulated as follows:

H4: Political connection moderates the relationship between human capital and earnings quality.

H5: Political connection moderates the relationship between structure capital and earnings quality.

H6: Political connection moderates the association between relational capital and earnings quality

## Research Methodology

### Data and sample selection

The scope of this investigation is confined to companies publicly traded on the Amman Stock Exchange (ASE), which comprises three subsectors: services, finance, and industrial. The study focuses solely on the services and industrial sectors, as the financial sector operates under separate regulations overseen by the Central Bank of Jordan. The selected companies for the study were those listed on the ASE

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between 2017 and 2020, and data for the study were extracted from the annual reports of these companies, which are readily available on their respective websites.

As of the conclusion of 2020, there were a total of 185 listed enterprises, with 42 in the services sector (22%), 97 in the finance sector (52%), and 46 in the industrial sector (25%). While the study encompasses both the industrial and services sectors, the financial sector has been deliberately excluded due to its distinctive regulatory frameworks governing financial disclosures, as stipulated by the Insurance Commission and the Jordan Central Bank. Twenty-two companies from the initial sample either lacked annual financial reports or possessed incomplete data for the years spanning from 2017 to 2020. Additionally, companies lacking sufficient governance frameworks or financial information were excluded from the sample. The final dataset comprises 264 observations obtained from 66 companies, covering the period from 2017 to 2020.

## Variables Measurements

### Dependent Variable Measurement

The concept of earnings quality is intricate and incorporates various dimensions, including but not limited to earnings smoothing, earnings management, conservatism, and time-series properties of earnings (Gutiérrez & Rodríguez, 2019). Consequently, the selection of a method to gauge earnings quality relies on the data at hand and the effectiveness of the estimation models. In this study, discretionary accruals (DACC) were employed as a proxy for measuring earnings quality. High levels of discretionary accruals are indicative of low earnings quality, while low levels suggest the opposite (Sun, Salama, Hussainey, & Habbash, 2010).

In the existing literature, commonly utilized models for measuring discretionary accruals (DACC) include those proposed by Jones (1991) and the modified Jones model introduced by Dechow, Sloan, and Sweeney (1995) as mentioned by the study of Straková (2021). The modification of the Jones model, as presented by Dechow et al. (1995), incorporates adjustments for changes in sales by accounting for alterations in receivables. This modification aims to mitigate measurement errors in DACC derived from revenue-based calculations and serves as the rationale behind the adaptation of the conventional Jones model. Furthermore, the study by Dechow et al. (1995) revealed that the Modified Jones model stands out as the most effective test for identifying discretionary accruals among a range of companies when compared to alternative models such as the industry model, Healy DeAngelo model, or the standard Jones model.

Consequently, the Modified Jones Model used to evaluate the level of DACC as proxy for earnings quality in the firm. An increased value of DACC indicates a decreased value of earnings quality. In accordance with previous research Alodat, Al Amosh, Alorayni, and Khatib (2023); Türegün (2020) the total accruals (TAt) are calculated as the difference between net earnings and cash flows from operating activities for the company i in year t.

To measure earnings quality, the Modified Jones Model calculates the level of DACC for a particular company as the difference between total accruals and non-discretionary accruals (NDA). The modified Jones model can be represented as follows:

$$\boldsymbol{TAt = \alpha 1}\left(\frac{1}{At\text{-}1}\right)\boldsymbol{+ \alpha 2}\left(\frac{\Delta REVt}{At\text{-}1} - \frac{\Delta RESt}{At\text{-}1}\right)\boldsymbol{+ \alpha 3}\left(\frac{PPET}{At\text{-}1}\right) + \varepsilon it \qquad (1)$$

*"Where:*

*TAt = Total accruals = Subtracting operating cash flow from net income.*
*$A\tau\text{-}_1$ = Total assets in year τ-1*
*$\Delta REV\tau$ = Change in sales revenues in year τ less revenues in year t –1*
*ΔRESt = net receivable in year t less net receivables in year t – 1*

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*PPEτ = Property, plant and equipment in year τ*
*&τ = Residuals in year τ (earning management score).*

To reduce heteroscedasticity, with numbers at t - 1, the variables were divided by the total assets. (Dechow, Sloan, and Sweeney 1995; Labelle, Gargouri, and Francoeur 2010). This research calculated the expected coefficients and calculated the (NDAt) as follows:

$$NDAt = â1(\frac{1}{At\text{-}1}) + â2\,(\frac{\triangle REVt}{At\text{-}1} - \frac{\triangle RESt}{At\text{-}1}) + â3(\frac{PPET}{At\text{-}1}) \qquad (2)$$

Where ˆa1, ˆa2 and ˆa3 were the estimated coefficients of α1, α2, and α3, respectively. After determining NDAt using Equation (2), the discretionary accruals (DACC) are the difference between (TAt) and (NDAt). As seen in the following equation:

$$DACC = TAt - NDAt \qquad (3)$$

The absolute value of DACC was utilised to assess the degree of earnings quality. This is consistent with previous earnings quality research since the modified Jones model has been widely utilised as a proxy for earnings quality (Rezaee, Dou, & Zhang, 2020).""

**Intellectual Capital Components Measurements**

In the field of intellectual capital, many studies have explored the impact of intellectual capital on accounting earnings. Pulic's Value Added Intellectual Coefficient (VAIC) model has been widely used to measure the efficiency of utilising organisational resources by analysing data gathered from annual reports and financial statements (Pulic, 1998, 2000, 2004). This model measures the size and efficiency of intellectual capital components and has significantly impacted on the field of intellectual capital with numerous studies relying on it to measure intellectual capital components (Nazari & Herremans, 2007).

In line with prior studies, the present study employed the VAIC model to measure intellectual capital components, which consist of three independent variables: human capital efficiency, structural capital efficiency and relational capital efficiency. The first step in calculating these components is to calculate the value added (VA), which is an objective measure of business success and reflects a company's ability to generate value (Pulic, 2004). The calculation of VA is performed using the company's financial accounts as follows:

VA = OP + EC + D + A

Where,
OP = Operating profit;
EC = Employee costs;
D = Depreciation;
A = Amortisation.

Pulic (1998) maintained that the total cost of salaries and wages is a representation of a firm's human capital. Subsequently, the efficiency of human capital is measured by the following calculation:

HCE = VA / HC

Where,
HCE = Human capital efficiency.
HC= Personal cost (Salaries and Wages).

In the Value Added Intellectual Coefficient (VAIC) model, the efficiency of structural capital is measured through Structure Capital Efficiency (SCE). To determine the SCE, it is first necessary to calculate the value of structural capital using the following equation:

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$$SC = VA - HC$$

Where,
SC = Structural capital for the firm.

The efficiency of structural capital (SC) is dependent on the value added (VA) and is a complementary factor in creating it. As the overall efficiency of intellectual capital increases, both human capital efficiency (HC) and SC efficiency increase accordingly. The efficiency of SC can be determined as thus:

$$SCE = SC / VA$$

Where,
SCE= Structure capital efficiency

The last component of intellectual capital is relational capital; for calculating the efficiency of relational capital, we have to collect the cost of advertisement and marketing in the firm from the annual report. relational capital efficiency is determined as follows:

The final element of intellectual capital is referred to as relational capital. To evaluate its efficiency, it is necessary to gather information on the costs associated with advertisement and marketing from the company's annual report as outlined by (Lotfi, Salehi, & Dashtbayaz, 2021; Pulic, 2000). The efficiency of relational capital can then be determined as follows:

$$RCE = OC / VA$$

Where,
RCE= Relational capital efficiency.
OC= The cost of advertisement and marketing.

**Moderator and Control Variables**

Table 1 shows the measurement of political connections as a moderator and the control variables.

*Table 1. Measurement of moderating variable and controls.*

| Variables | Measurement & Sources |
|---|---|
| Political connection (Moderating variable) | Quantified by the count of BOD members possessing political connections (Dicko, 2017)." |
| Firm size | Natural logarithm of total assets (Harymawan & Nowland, 2016). |
| Leverage | Total liabilities divided by total assets is the ratio that represents the leverage (Harymawan & Nowland, 2016). |
| Firm performance | The ratio of Earnings before interest and taxes to the total assets (Harymawan & Nowland, 2016). |
| Audit Quality | Takes the value of "1" if the company is subjected to audit by BIG4 Auditors, and "0" if not (Al-Rassas, 2015). |

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| | |
|---|---|
| Sales growth | Annual sales growth is calculated by subtracting the previous year's sales from the current year's sales, and then dividing the result by the previous year's sales (Al-Rassas, 2015). |

## Result and Discussion

### Descriptive Statistics

We conducted descriptive statistics for the study variables. Table 2 presents the descriptive statistics indicating the study variables' median, mean, standard deviation, maximum and minimum.

Table 2. Descriptive statistics

| Variables | Obs | Mean | Std. Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| DACC | 264 | 0.0526 | 0.0402 | 0.00008 | 0.1982 |
| HCE | 264 | 3.3443 | 6.5934 | -14.3466 | 64.3404 |
| SCE | 264 | 0.6250 | 1.5128 | -15.4509 | 9.9174 |
| REC | 264 | 0.0229 | 0.0778 | -0.3042 | 0.6119 |
| POLCON | 264 | 1.0433 | 0.9990 | 0.0000 | 6.0000 |
| ROA | 264 | 1.6482 | 7.3169 | -23.736 | 38.668 |
| FIRMSIZE | 264 | 7.5631 | 0.6598 | 5.95261 | 9.1584 |
| LEV | 264 | 32.8571 | 21.4255 | 0.283 | 95.901 |
| SGROWTH | 264 | -0.0743 | 0.3612 | -2.1607 | 1.1596 |

As previously mentioned, this study uses the Modified Jones Model to detect the absolute discretionary accrual (DACC) indicators to measure earnings quality. The descriptive statistics for the earnings quality data can be found in Table 2. The analysis shows that the mean value of DACC is 0.0526, with a maximum value of 0.1982 and a minimum value of 0.0008. The standard deviation of DACC is 0.0402, the mean is similar to prior findings in Jordan. The researchers reported similar mean values of 0.092, 0.0628, 0.0427, and 0.069, respectively (Alzoubi (2016); Basheer and Khamees (2016); Hashmi, Brahmana, and Lau (2018); Idris, Abu Siam, and Nassar (2018).

On the other hand, the results of the human capital (HCE) analysis as presented in Table 2, shown that the mean HCE among the Jordanian listed firms from 2017-2020 was 3.3443, which is consistent with the findings of the study by Sowaity (2022). The lowest HCE value was -14.3466, while the highest was 64.3404. Correspondingly, the average structural capital (SCE) among the Jordanian-listed firms was found to be 0.6250, which supports the results of the study conducted by Shubita (2019). The range of SCE values was -15.4509 to 9.91742, with a maximum value and a standard deviation of 1.5128. Furthermore, the results of the relational capital (RCE) analysis, detailed in Table 2, revealed an average index of 0.0229, with the minimum value being -0.3042 and the maximum value being 0.6119. These findings provide a comprehensive view of human, structural, and relational capital among the Jordanian-listed firms.

Moreover, Table 2 presents a statistical summary of the political connections, which is used as the moderator variable in the present study, the average of existing political members on the board of directors among the Jordanian listed firms on the ASE is 1 member where the mean is (1.0433), this is

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indicating that political intervention tends to be high existing in Jordanian firms. This result is aligned with the Alshirah, Alshira'h, and Lutfi (2021) study, which found that 48.14% of Jordanian firms are politically connected and they indicated that government intervention is common in Jordanian firms.

In relating to the control variables, Table 2 reveals that the mean profitability (ROA) of firms is 1.6482, with a maximum value of 38.668 and a minimum of -23.736. The negative indication of the ROA suggests that some firms incurred losses during the study period. Additionally, the average firm size (FIRMSIZE) was found to be 7.5631, which is consistent with the average size of 7.29 for Jordanian firms by Alhadab et al., (2020). The maximum and minimum values of FIRMSIZE are 9.15842 and 5.95261 respectively, with a standard deviation of 0.65514. The mean leverage (LEV) of the Jordanian listed firms on the ASE during the study period was 32.8571, with a maximum and minimum of 95.901 and 0.283 respectively, and a standard deviation of 21.5923. This aligns with the findings of the study by Alhadab, Abdullatif, and Mansour (2020). In terms of sales growth (SGROWTH), Table 2 shows an average of -0.0743, with a minimum of -2.1607 and a maximum of 1.1596. This drop in sales in many Jordanian firms may be attributed to the impact of the COVID-19 pandemic on the stock market and the economy in general, as well as the location of Jordan on the border with Syria and Iraq, which increases the cost of trade due to border closures.

Table 3 Descriptive Statistics for Dummy Variable

| **Dichotomous Variable** | **Number of ASE frequency of 1s** | **Number of ASE frequency of 0s** |
|---|---|---|
| **Audit quality (BIG4)** | 103<br>(39.1%) | 161<br>(60.9%) |

. BIG4: 1 is an audit by BIG4 firms, 0 is otherwise.

Table 3 provides a summary of the descriptive statistics for the Audit Quality (BIG4) dummy variable. The results show that 39.1% of the companies in the ASE are audited by Big4 audit firms, while 60.9% are audited by non-Big4 audit firms. This suggests that a significant number of non-financial firms listed in the ASE tend to be audited by non-Big4 audit firms. These findings highlighted the need for improvement in the quality of external audits conducted for firms listed in the ASE.

The study used a Fixed Effect Regression method with robust standard error to account for heteroscedasticity and autocorrelation, and assess the impact of the intellectual capital components and earnings quality as shown in Table 4.

**Correlation Matrix**

The correlation matrix is a tool utilised by researchers to gain an overall understanding of study data (Beiner, Drobetz, Schmid, & Zimmermann, 2006; Ben Barka, Legendre, & Governance, 2017). In this research, the matrix provides insight into the correlation between the dependent and independent variables, as well as the presence of multicollinearity among the independent variables. The Pearson correlation method was used to determine the strength of relationships among variables, as shown in Table 4. A general rule of thumb is that multicollinearity may exist if a correlation exceeds 0.80 in the correlation matrix of all independent variables (Gujarati, 1995). The results of the matrix indicate no adverse multicollinearity in this study, as none of the variables correlates above 0.80.

Table 4 Pearson Correlation for 264 Firms Observations

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| Variables | DACC | Hce | Sce | Rec | Polcon | Roa | Firmsize | Lev | Big4 | Sgrowth |
|---|---|---|---|---|---|---|---|---|---|---|
| DACC | 1 | | | | | | | | | |
| HCE | -0.120* | 1 | | | | | | | | |
| SCE | -0.016 | -0.003 | 1 | | | | | | | |
| REC | 0.032 | -0.077 | -0.072 | 1 | | | | | | |
| POLCON | 0.033 | 0.021 | -0.001 | 0.029 | 1 | | | | | |
| ROA | -0.169* | 0.058 | 0.106* | -0.077 | 0.014 | 1 | | | | |
| FIRMSIZE | -0.032 | 0.166* | -0.043 | 0.091 | -0.145* | 0.157* | 1 | | | |
| LEV | 0.132* | -0.017 | 0.001 | -0.007 | -0.088 | -0.131* | 0.466* | 1 | | |
| BIG4 | -0.001 | 0.245* | -0.034 | 0.061 | -0.102 | 0.163* | 0.404* | 0.111 | 1 | |
| SGROWTH | -0.004 | -0.068 | -0.070 | -0.001 | -0.193* | 0.089 | 0.093 | 0.084 | -0.040 | 1 |

DACC = Absolute value discretionary accruals, HCE = Human capital efficiency, SCE= Structure capital efficiency, RCE = Relational capital efficiency, FIRMSIZE= Firm size, LEV= Leverage, ROA= Return on assets or firm performance, BIG4= Audit quality, SGROWTH= Sales growth, POLCON= Political connections.

* Correlation is significant at the 0.05 level.

**Multivariate Regression**

The study used a Fixed Effect Regression method with robust standard error to account for heteroscedasticity and autocorrelation, and assess the impact of the intellectual capital components and earnings quality as shown in Table 5.

Table 5 Fixed Effect Regression Results for the intellectual capital components and discretionary accruals.

| **Variables** | **Exp Sign** | **Coefficients** | **t-stat** |
|---|---|---|---|
| HCE | - | -0.0020215 | -3.19*** |
| SCE | - | -0.000562 | -1.18 |
| REC | - | -.0034549 | -0.50 |
| ROA | - | -.0037371 | -2.87*** |
| FIRMSIZE | - | -.017657 | -0.12 |
| LEV | + | .2903948 | 2.05** |
| BIG4 | - | -.0354643 | -0.96 |
| SGROWTH | - | -.014756 | -0.80 |
| _CONS | - | -.1863722 | -0.18 |
| **R2 within** | | **0.3214** | |
| Prob > F | | 0.0000*** | |
| F-value | | 3.22 | |
| **N** | | 264 | |
| **Hausman test** | | **63.77*** ** | |

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| | |
|---|---|
| **Breusch-Pagan test** | **4.60**** |
| **Heteroskedasticity** | **28177.15***** |
| **Autocorrelation** | **15.839***** |

*significant at the 0.10 level; **significant at the 0.05 level; ***Significant at the 0.01 level
DACC = Absolute value discretionary accruals, HCE = Human capital efficiency, SCE= Structure capital efficiency, RCE = Relational capital efficiency, FIRMSIZE= Firm size, LEV= Leverage, ROA= Return on assets or firm performance, SGROWTH= Sales growth, POLCON= Political connections.

Table 5 shows that the R Square for the study model is **0.3214**, meaning the model explains 32.14% of the variability in Earnings Quality as measured by the Modified Jones Model. The model is highly significant with a F-statistic of 3.22 and p-value of less than 0.00, indicating that the model has a significant impact on the variations in earnings quality in Jordanian firms.

Moreover, the present study hypothesized that human capital would have a positive relationship with earnings quality. This hypothesis was supported by the results of the analysis, which revealed a negative and significant coefficient at a 1% level (t = -3.16, P-value > 0.01) between human capital and DACC, as presented in Table 5. This indicates a strong positive association between human capital and earnings quality, and thus hypothesis H1 was accepted. This result is supported by the resource independence theory, which states that a company's resources, including human capital, can affect an organisation's environment, financial output, and profitability. Additionally, this finding is consistent with prior studies, such as those conducted by Jaya et al. (2021b) in Indonesia, Sarea and Shaima (2016) in Oman, Mojtahedi (2018) in Malaysia, Khajavi et al. (2016) in Iran and Darabi, Rad, and Ghadiri (2012) in Iran, who also found a positive relationship between human capital and earnings quality. These studies have shown that companies that focus more on the level of human capital have the highest level of earnings quality. Moreover, the study of Mojtahedi (2018) justified the significant positive effect of human capital on earnings quality by providing empirical evidence that executive management's growing level of knowledge and experience results in a decrease the discretionary accruals, which in turn enhances earnings quality. In contrast, hypotheses H2 and H3 predicted a positive relationship between both structural capital and relational capital and earnings quality. However, the regression analysis results shown that structural capital and relational capital were insignificantly related to DACC, with a negative relationship for structural capital (t = -1.18, P-value < 0.1), this finding suggests that structural capital does not play a significant role in improving the level of earnings quality, which is in line with the findings of Sarea and Shaima (2016), Shehada (2019), Rachmawati (2020) and Darabi, Rad, and Ghadiri (2012). Moreover, Rachmawati (2020) study indicated that the underlying reason for the insignificant impact of structural capital on earnings quality is the high burden of expenditure on investments in structural capital, which prevents it from affecting company performance, and therefore, does not impact earnings quality. Also, the results show a positive but insignificant relationship for RCE (t = 0.50, P-value < 0.1), as evidenced in Table 5. This suggests an insignificant association between structural capital and relational capital with earnings quality. This means that the level of relational capital in Jordanian firms does not appear to have a significant impact on the level of earnings quality. This finding is in contrast with the studies of Mojtahedi (2018) and Sowaity (2022), which found a strong correlation between relational capital and earnings quality. Despite this, Shehada (2019) study found that some intellectual capital components of companies, specifically relational capital, do not significantly affect earnings quality. The researcher was attributed to a lack of awareness of the importance of investing in intellectual capital, including relational capital. Thus hypotheses H2 and H3 were rejected. Therefore, It is believed that the negative results for structural capital and relational capital may be due to the ownership structure of Jordanian firms, with 80% belonging to families. This can lead to a decrease in the interest of investing additional resources in focusing on structural capital and relational capital.

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Furthermore, there is no suggestion in Jordanian corporate laws and regulations of any focus on intellectual capital.

In regards to the control variables, there was found to be a significantly negative relationship between ROA and DACC (t=-2.78, P-value<0.01) at the 1% level. This implies that firms with higher performance have a greater tendency to show a higher earnings quality. This aligns with the findings of a study conducted in Jordan by Alhadab et al. (2020). Alhadab et al. (2020). Generally, firms with higher leverage are motivated to manipulate earnings to avoid violating debt covenants. However, it was found that FIRMSIZE and DACC had a negligible positive connection (t=-0.12, p>0.10) as shown in Table 5, a similar result to Johl, Johl, Subramaniam, and Cooper (2013). Additionally, LEV was found to have a significant positive relationship with DACC (t=2.05, P-value<0.01) at the 1% level, in line with the findings of Al-Haddad and Whittington (2019) in their study of firms listed on the Amman Stock Exchange. In terms of audit quality, a significant negative association was found between BIG4 and DACC (t=-0.96, P-value<0.10) at the 10% level, as shown in Table 5, consistent with the results of Alzoubi (2019). It is expected that the BIG4's superior knowledge and resources compared to non-BIG4 would positively impact profits and aid in the detection of earnings management activities and increase the level of earnings quality (Alzoubi, 2019). Finally, the coefficient of sales growth (SGROWTH) has shown a positively insignificant relationship with DACC (t=-0.80, P-value<0.10) in line with Johl et al. (2013).

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**Hierarchical Regression**

Table 6 Hierarchical Regression Results

| Variables | Step 1 | | Step 2 | | Step 3 | | Step 4 | |
|---|---|---|---|---|---|---|---|---|
| | **Coef.** | **t-stat** | **Coef.** | **t-stat** | **Coef.** | **t-stat** | **Coef.** | **t-stat** |
| ROA | -.0036039 | -3.47*** | -.0037371 | -2.87*** | -.0037454 | -2.91*** | -.0036836 | -15.14*** |
| FIRMSIZE | -.0239371 | -0.22 | -.017657 | -0.12 | -.0123082 | -0.08 | -.0079783 | -0.09 |
| LEV | .2916028 | 7.54*** | .2903948 | 2.05** | .28954 | 2.04*** | .2947221 | 2.66** |
| BIG4 | -.0318076 | -0.57 | -.0354643 | -0.96 | -.0298596 | -0.72 | -.0281267 | -1.21 |
| SGROWTH | -.0318076 | -0.89 | -.014756 | -0.80 | -.0127951 | -0.70 | -.015757 | -8.39*** |
| HCE | | | -0.0020215 | -3.19*** | -.0020223 | -4.05*** | -.0027833 | -3.37*** |
| SCE | | | -0.000562 | -1.18 | -.0006039 | -0.19 | -.0079783 | -1.73* |
| REC | | | -.0034549 | -0.50 | -.0020223 | -0.41 | .0004736 | 0.11 |
| POLCON | | | | | .004883 | 0.99 | -.0059083 | -0.79 |
| POLCON * HCE | | | | | | | .0006648 | 1.35 |
| POLCON * SCE | | | | | | | .0006648 | 2.23** |
| POLCON * RCE | | | | | | | -.0019847 | -0.79* |
| R2 | **0.3049** | | **0.3214** | | **0.3238** | | **0.3303** | |
| R2 change | | | 0.0000 | | 0.0024 | | 0.0089 | |
| F-value | | | 3.22 | | 3.13 | | 36.39 | |
| Significant F | | | 0.0000 | | 0.0000 | | 0.0000 | |

*significant at the 0.10 level; **significant at the 0.05 level; ***Significant at the 0.01 levels

This research examines how political affiliations as a moderating variable affect the relationship between intellectual capital components, and earnings quality as shown in Table 6. Multivariate hierarchical regression analysis is used to assess the moderation variable. This study adopts the unstandardized

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solution to mitigate the multicollinearity problem. After creating the interaction terms, a hierarchical multiple regression equation using STATA is structured to test for moderator effects. The variables are entered into the regression equation through four steps in accordance with the guidelines suggested by Baron and Kenny (1986). The first step tests the control variables, the second step tests the independent variable, the third step tests the moderating variables, and the final step tests the interaction terms of the independent and moderating variables. The change in the R2 will indicate whether there is a significant moderation effect (Hair Jr, Babin, & Anderson, 2010).

As demonstrated in Step 1 of Table 6, the regression model, which includes firm size, financial leverage, profitability (ROA), sales growth, as well as audit quality as control variables, results in an R2 of 0.3049. This indicates that 30% of the level of earnings quality can be explained by these control variables.

The results of Step 2 reveal that without the influence of political connections, intellectual capital components have a positive impact on earnings quality. This is reflected in the increase of R2 to 0.3214 is considered significant as the F change is significant (0.000), indicating an increase in the level of earnings quality that can be explained and described by incorporating intellectual capital components.

Step 3 results demonstrate that the inclusion of political connections as a moderator variable still results in a significant F value (0.0000), indicating a substantial impact of the moderator variable on the dependent variable.

Results in Step 4 show that when the interaction is entered in the final step, R2 has increased from 0.3214 to 0.3303. The R2 change (0.0089) is significant. This indicates that the political connections moderate the relationship between some study variables and earnings quality. In other way round, when some of the intellectual capital components interact with political connections, earnings quality became in some cases lower and higher, as shown in Table 6 by the negative and positive signs with the DACC. Furthermore, depending on the results in the fourth step political connections doesn't moderate the relationship between human capital and earnings quality. This suggests that political connections do not play a significant role in moderating the relationship between the two variables. Moreover, one possible explanation for this result is that the importance of human capital in driving earnings quality may outweigh the potential influence of political connections. The study has found that human capital is a strong predictor of earnings quality, regardless of the presence of politically connected individuals within the organization. This is consistent with previous research by Al-Hajaya, Altarawneh, and Altarawneh (2019), who found that Jordanian companies prioritize investment and disclosure in the area of human capital.

Likewise, Table 6 specifies that the coefficient of (SCE*POLCON) is positively significant at the 1% level of confidence with DACC ($t = 2.23$, $p < 0.05$), which denotes that POLCON has a moderating effect between the SCE and DACC, this suggests that the presence of politically connected members within an organization can diminish the negative impact that structural capital has on earnings quality. Likewise, resource dependence theory provides a useful framework for understanding the relationship between political connections, structural capital, and earnings quality. According to this theory, organizations rely on external resources to survive and thrive, and they may engage in strategic actions to acquire or maintain access to these resources. Political connections are one way that organizations can secure access to resources such as government contracts, regulatory approval, or favourable tax treatment (Najaf & Najaf, 2021). However, these connections may also come with certain costs, such as reduced accountability, increased regulatory scrutiny, or reputational damage. therefore, H5 is accepted. The increase in POLCON among the directors' members affects the investment in SCE and raises DACC (decrease in the level of earnings quality), which is the explanation for this outcome. Finally, the moderating effect of political connections as shown in Table 6 reveals that POLCON at the 0.05 level

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of significance adversely moderates the link between RCE with DACC (t = -0.79, p>0.10). Thus, the RCE results in a lower DACC (increase in the level of earnings quality) for enterprises with a high level of POLCON. According to the findings, enterprises with a high level of POLCON have higher earnings quality than enterprises with a low level of POLCON when the level of RCE is high.

## Conclusion

The purpose of this study was to examine the relationship between intellectual capital components, and earnings quality in the Jordanian market. The study focused on the impact of human capital, structure capital, as well as relational capital on discretionary accruals, which were utilized as a measure of earnings quality. Additionally, the study aimed to provide new insights into the role of political connections as a moderating variable in the relationship between intellectual capital, and earnings quality. This study is unique in that it is the first to examine the moderating effect of political connections on the relationship between these variables and earnings quality.

The motivation for this study arose from the knowledge gap in the understanding of earnings quality in Jordanian enterprises, which has been found to be low according to previous studies. The study shed light on the role of intellectual capital components in influencing the earnings quality of Jordanian firms. Hence, the present study adds to the existing literature by offering a more nuanced understanding of the determinants of earnings quality in Jordanian firms.

The findings of this research show that intellectual capital components do have an impact on earnings quality. Overall, the study findings show that human capital positively affects earnings quality whereas both structure capital and relational capital didn't show an effect on earnings quality. In conclusion, this study provides a comprehensive understanding of earnings quality in Jordan and enriches the literature on the important role of intellectual capital in influencing earnings quality in the context of Jordan. Finally, evaluating political connections as a moderating function provides numerous theoretical and literary insights.

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